T4 TECHNICAL EVALUATION FORM – FIRM FIXED PRICE & TIME-AND-MATERIALS

T4 Number T4-0250	Task Title VistA Adaptive Maintenance
Name of Offeror Offeror B	Date of Proposal August 17, 2017

1. Technical Evaluation Criteria:

TECHNICAL: The evaluation of the technical proposal considered the following:

(1) Understanding of the Problem – The Technical Volume of the Task Execution Plan (TEP) was evaluated to determine the extent to which it demonstrates a clear understanding of all features involved in solving the problems and meeting and/or exceeding the requirements presented in the task and the extent to which uncertainties are identified and resolutions proposed.

(2) Feasibility of Approach –The Technical Volume was evaluated to determine the extent to which the proposed approach is workable and the end results achievable. The Technical Volume was evaluated to determine the level of confidence provided the Government with respect to the Offeror's methods and approach in successfully meeting and/or exceeding the requirements in a timely manner.

2. Proposal Summary:

The Offeror's response described its technical and management approach to the problem identified in the Performance Work Statement (PWS). The Offeror included its approach to creating a "service layer" to emulate Computerized Patient Record System (CPRS) Remote Procedure Calls (RPCs) to be built on a third-party project called the VistA Data Project (VDP). The proposal describes how the Offeror will also utilize its experience, knowledge, lessons learned, and approach it used on the VistA Interface Adaptor (VIA) project, which involved the encapsulation of Massachusetts General Hospital Utility Multi-Programming System (MUMPS) RPCs for VistA scheduling and orders management. The response includes a discussion on the Offeror's approach to utilize the InterSystems' Node.js add-on module that would expose VistA's data as a single, secure, symmetric read-write server-side interface to all underlying data for external interfacing and integration. Offeror B also described its intent to automate as much of the testing as possible using third-party tools. The Offeror provided its overall proposed as-is and to-be approach and architecture (Figure 5). Finally, the proposal outlines the staffing levels by labor category and contract function and the hours proposed for each as referenced by prime and subcontractor.

The Offeror has proposed to team with one subcontractor.

After review of the entire proposal, it was determined that the Offeror's approach contained the Deficiencies detailed below. The remainder of the VistA Adaptive Maintenance requirements was adequately addressed.

3. Summary of Significant Strengths and Strengths:

None identified

Technical Rating:

Unacceptable

4. Summary of Significant Weaknesses and Weaknesses:

None identified

5. Summary of Deficiencies:

Deficiency #1 (TEP pp12-13, Section 2.1, RTEP Instructions B.1.5,): During Release and Deployment Support, the PWS requirement is for progressing the proposed solution to emulate CPRS RPCs for select data read functions and select data read/write transactional functions for Outpatient Pharmacy computerized Physician Order Entry and progressing the solution to national deployment following Initial Operating Capability while retaining full functionality against a single centralized service, and replacing those functions of the original, de-centralized VistA source instances. The Offeror proposes no solution or architecture for a single centralized service capable of replacing the original, de-centralized VistA source instances and just reiterates the requirement and its intent to support it. This does not provide the Government any assurances that the Offeror has an understanding of the problem to be solved. The Offeror does not demonstrate an understanding of the idea of replacing central services in a way that CPRS and VistA still continue to run . This results in an essential component of the Offeror's solution approach completely absent. Without the capability to retire the service from the 131 de-centralized VistA instances using the VICS, there is no capability to migrate off VistA to a new modern cloud based EHR. This represents a level of risk that is unacceptable.

Deficiency #2 (TEP pp3-4, Section 2.1, RTEP Instruction B.1.1.a): In its proposed approach for developing a service layer to emulate CPRS RPCs, which is to include FileMan data modeling using web-standard technologies and representation, the Offeror demonstrates a lack of understanding of FileMan Data Modeling. The Offeror proposes to create a scheme to represent VistA data by analyzing the MUMPS Globals and map those to collections. The Offeror approach lacks any reference to FileMan's data definition mechanism, the data dictionary, and thus implies the Offeror does not understand the structure of FileMan. The RTEP instructions specifically requested emphasis on an approach to FileMan data modeling. It is notable that despite stating it will use design patterns of the VistA Data Project, Offeror B fails to describe any of these patterns and focuses instead on MUMPS and mapping MUMPS language structures directly. Failure to understand FileMan internals and the third party mechanisms Offeror B references is a fundamental and major defect, as FileMan modeling is the first RTEP requirement upon which all other RTEP requirements depend. Without an understanding of Fileman Data Modeling, the dependent requirements of the VistA Adaptive Maintenance project will not be possible to fulfill. This puts the project at a very high risk of failure, thus impeding the migration of VistA to a modern, commercial cloud based EHR.

Additionally, **t**he Offeror indicated its intent to build on the work done through the VistA data project (VDP). The Offeror's response contains unmodified copies of text and figures from the VDP website and slideware that it appears to have merely copied and pasted into its TEP without providing any explanations or details of the complex factors involved in the creation of the Master VistA Data Model (MVDM) and its application to the requirements of the VistA Adaptive Maintenance project. The Offeror stated that "MVDM creates a 'universal' data model that each VistA

conforms to," which implies that MVDM creates itself, rather than describing specifically how the Offeror would create MVDM as a standardized data model for use by the 131 VistA systems. Furthermore, the Offeror depicted in Figure 2: Future Centralized Fileman Data Access an unmodified VDP figure, but did not provide any supporting text to demonstrate a technical approach or complete solution architecture capable of providing synchronization required to enable the final solution to be VistA/MUMPS backwards-compatible or a centralized Veteran Integrated Care Services (VICS). Rather, it states, "Following similar design patterns, we will utilize enterprise-wide Master VistA Data Model (MVDM)." The Offeror goes on to state, "This data-centric, model-driven approach to VistA data allows management and interfacing through modern web standard technologies as opposed to the current MUMPS code-centric approach to interfacing VistA's data which relies on RPCs," a direct restatement of the requirement without any supporting approach. The Offeror's lack of understanding of this third party VDP project makes successful application of the VDP's MVDM to the FileMan data modeling requirements of the VistA Adaptive Maintenance project highly unlikely. The VDP was for re-engineering VISTA using node.js and providing it with a new more secure interface. It was neither meant to establish national services (VICS) nor retire equivalent VISTA functionality. Beyond repeating its purpose based on publicly available materials, the Offeror failed to relate the work of VDP to the specific requirements of this project. The Offeror's proposal indicates a failure to emulate and replace the Patient Data Entry and Outpatient Pharmacy Computerized Physician Order Entry VistA functionality as centralized services, omitting the most essential feature of the final solution.

Deficiency #3: (TEP pp 3-6, Section 2.1, RTEP Instruction B.1.1.g and B.1.2.f): The Offeror demonstrated a lack of understanding of the intended final solution as explicitly described in PWS Sections 1.0, Background and 5.2, Adaptive Maintenance Services, and as further emphasized in RTEP Instruction B.1.1.g and B.1.2.f, which states that, among other requirements, the "final solution has no legacy MUMPS dependencies." The Offeror's response reiterates the requirement but does not at all reference an approach to this requirement. Rather, the Offeror references its experience with the VIA project. The VIA project created services to access RPC calls using a wrapper written in Java. This approach efficiently provided the service without replacing MUMPS code. On page 2 of the response, the Offeror stated "Although VIA services were developed in Java, the basic principles and methodology will remain the same". The Offeror's approach applies a completely different methodology (e.g., RPC wrapping), which will not yield the project goal of having no Legacy MUMPS code dependencies and would result in the opposite of a model-driven emulation in centralized services, which is a stated requirement of the PWS. The Offeror's approach is not feasible, as it continues reliance on, versus replacement of MUMPS code, which thus creates a risk for successful contract performance. Making the final solution architecture depend on legacy MUMPS infrastructure prevents migration off legacy MUMPS infrastructure. Lack of migration off the legacy MUMPS infrastructure to centralized services with no MUMPS dependency places the Government at risk of successful completion of this project and increases the risk to successful migration to a cloud-based, commercial EHR.

Deficiency #4 (TEP p4, Section 2.1, Request for Task Execution Plan (RTEP) Instructions B.1.1.c): The Offeror's approach to developing a service layer to emulate CPRS RPCs for select data read functions included a "Javascript based approach" using the InterSystems Cache add-on module for Node.js. According to

the Offeror, this InterSystems add-on module "can expose VistA's data as a single, secure, symmetric read-write, server-side interface to all underlying data." The Offeror provided an example of how this InterSystems Node.js module would provide "MUMPS emulation using a Javascript/Node.js-driven model-driven replacement." The Offeror's response indicates a failure to understand that Node.js is simply a Javascript run-time environment (i.e., runs Javascript code on the server) and has no additional functionality to which the Offeror implies regarding the ability to provide emulation. Specifically, it is not an off-the-shelf, "model-driven MUMPS emulator" as is assumed in the Offeror's response and which requires custom development as required of this project. If such a commercially-available product were available for the VistA MUMPS environment, there would be no need for this RTEP. The Offeror's proposed approach fails to address the problem of how to create the model-driven, MUMPS emulation in Javascript/Node.js, which is the foundation of this requirement, which ultimately places the Government at risk of successful completion of this project and increases the risk to successful migration to a cloud-based, commercial Electronic Health Record (EHR).

6. Special Terms and Conditions / Deviation / Critical Assumptions stated in TEP:

None identified.

7. Evaluation Criteria:

a. Understanding of the Problem

Overall, Offeror B's TEP demonstrates a lack of understanding of the requirements.

b. Feasibility of Approach

Overall, Offeror B's TEP demonstrates an approach that cannot be expected to meet the requirements and is considered very high risk.

8. Rating: Unacceptable

Offeror B's contains deficiencies that indicate a lack of understanding of the problems and an approach that cannot be expected to meet requirements or involves a very high risk; and none of these conditions can be corrected without a major rewrite or revision of the TEP.

Evaluator Signature Rafael Richards MD MS

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