Statement of Work (SoW) for Contract Software Modeling

Version 1.0

VESA DisplayPort Automotive Extensions Sub-Group

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Revision History

Name	Date	Reason For Changes	Version
J. Goel	02/16/2024	Version 1.0 approved by the board	Version 1.0

1. Introduction

This Statement of Work outlines the responsibilities and expectations for a Contract Software Modeling Expert specializing in C++ programming. The contractor will be engaged on an hourly basis to contribute to various software modeling projects.

We are looking for a software engineer who can create a software transmitter and receiver model to validate the DisplayPort Automotive Extensions (DP AE) specification. DP AE is a set of features that enhance the existing DisplayPort (DP) and embedded DisplayPort (eDP) standards for automotive display applications. DP AE aims to provide improved functional safety and security for displays that are connected, automated, shared, and electrified (CASE) in vehicles.

1.1 Responsibilities

- Create an initial analysis and software development plan and report outlining the effort required to develop and test the software C-Models.

- Design, develop, test, and document software modules for the transmitter and receiver of DP AE

- Implement the functional safety and security protocols as defined by the DP AE specification

- Support the verification and validation of the DP AE specification using the software model

- Collaborate with other engineers and stakeholders to ensure the quality and compatibility of the software model

- Troubleshoot and resolve issues related to the software model

1.2 Qualifications

- Bachelor's degree or higher in computer science, electrical engineering, or related field

- Experience in software development using C/C++, Python, or other programming languages

- Knowledge of DP and eDP standards and protocols

- Familiarity with DP AE specification and its features

- Understanding of automotive standards such as ISO 26262, SAE J3101, and UN Regulation No. 155

- Experience in software modeling, simulation, and testing tools

- Excellent communication and problem-solving skills

- Ability to work independently and in a team

29 # 2. Scope of Work

30 The contractor will be responsible for developing, testing, and optimizing C++ code for software
31 modeling applications. This includes but is not limited to creating algorithms, simulating system
32 behavior, and contributing to the design of software architecture.

33 This document defines the software requirements, versioning numbering system, and all related
34 software tests used to develop the following:

35   1. DP AE Specification v1.0 C-Model (CMOD)

36   2. Test Pattern Generation (TPG) software

37   3. Input (TESTS) and expected reference (RESULTS)

38 The following Figure 1 illustrates how the normative CMOD and TPG software interact to define
39 the DP AE Compliance Test Specification reference test results.
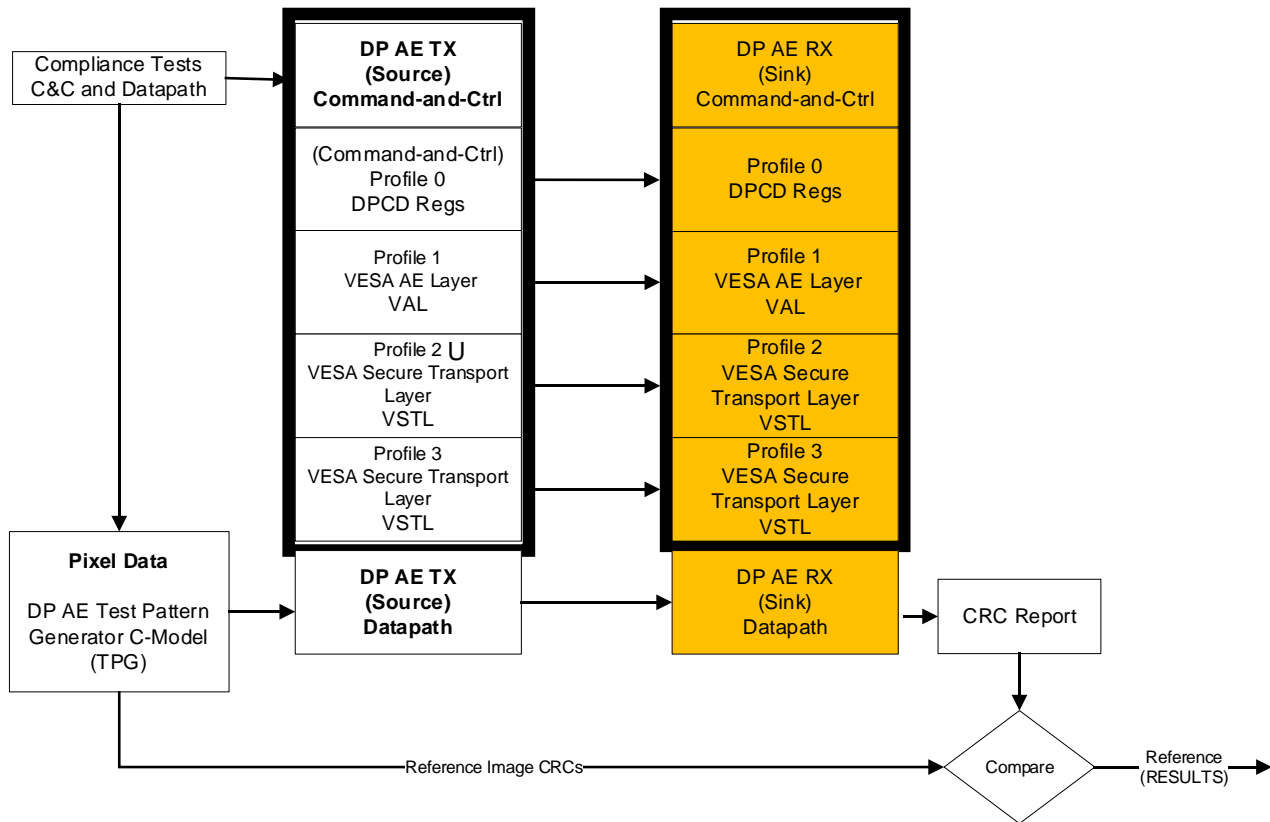
40

41 **Figure 1 - DP AE Spec TX and RX Software Model**

3. Project Stages and Acceptance Criteria

3.1 Stage 1: Initial Analysis and Planning

3.1.1 Objective: Assess project requirements and draft initial project plans.

NOTE: Functional Safety is an automotive technical term related to the proper functioning of automotive circuitry. It is abbreviated as **FuSa.**

1. A **Contractor** shall review the DP AE Specification and the DP AE Compliance Test Specification draft to understand the required functionality.

2. The **Contractor** shall review the source code of the existing DP AE Spec Software models, Test Pattern Generator and Reporting output formats. The contractor shall review the SPDM 1.2a specification as it applies to the DP AE Specification model.

3.1.2 - Deliverables: Requirement analysis document, project plan including timelines and milestones.

1. The **Contractor** shall create a technical report explaining the missing functionality for the command-and-control and data path C++-model for the FuSa and Security functionality.

2. Integrated Project Plan to address the missing functionality, time lines, deliverables and milestones

3. Estimated effort of on-going maintenance

3.1.3 - Acceptance Criteria: Documents are reviewed and approved by the project manager.

3.2 Stage 2: Architectural Design and Modeling (TBD)

- Objective: Design software models and system architecture.

- Deliverables: Design documents, UML diagrams, and initial model prototypes.

- Acceptance Criteria: Designs and prototypes are evaluated for compliance with requirements and approved by the technical lead.

3.3 Stage 3: Development

- Objective: Develop the software models in C++ code.

- Deliverables: Source code, documentation, and implementation reports.

- Acceptance Criteria: Source code is functional, well-documented, and passes code review standards. It must also adhere to predefined performance metrics.

3.4 Stage 4: Testing and Optimization

70

71 - Objective: Test and optimize the developed models for efficiency and reliability.

72 - Deliverables: Test plans, test cases, test reports, and optimized code.

73 - Acceptance Criteria: The code passes all test cases with desired performance benchmarks and is
74 optimized for efficiency.

3.5 Stage 5: Final Integration and Documentation

75

76 - Objective: Integrate the models into the existing system and provide comprehensive
77 documentation.

78 - Deliverables: Integrated software, final documentation, and user manuals.

79 - Acceptance Criteria: Integration is seamless, and documentation provides clear, concise
80 instructions and explanations.

3.6 Duration

81

82 This contract will span a period of [X months/weeks], starting from [Start Date] to [End Date].

83 Stage 1: Q1 2024

84 Stage 2: Q2 2024

85 Stage 3: Q3 2024

86 Stage 4: Q4 2024

3.7 Payment Terms

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88 The contractor will be compensated on an hourly basis at a rate of [Specify Rate] per hour. Invoices
89 will be submitted bi-weekly/monthly and are payable within [Number of Days] days of receipt.

3.8 Reporting and Communication

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91 The contractor will report to [Project Manager/Technical Lead Name] and participate in regular
92 meetings for progress updates and collaborative discussions.

3.9 Confidentiality and Intellectual Property

93

94 All work produced under this contract is the property of [Your Company Name], and the contractor
95 must adhere to confidentiality agreements as outlined in the contract.

96 **3.10 Signatures**

97 This SoW is valid upon the signatures of both parties.

98 [Your Company Name] Representative: _____ Date: _____

99 Contractor: _____ Date: _____