



# Stage 2 Preliminary Assessment

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

## 2.1 General Information

<b>Agency or State Entity Name:</b>	
Air Resources Board	
<b>Organization Code:</b>	
3900	
<b>Proposal Name:</b>	
SB – 210 Heavy Duty Inspection and Maintenance program	
<b>Department of Technology Project Number:</b>	3900-074

## 2.2 Preliminary Submittal Information

<b>Contact Information:</b>	
<b>Contact First Name:</b>	<b>Contact Last Name:</b>
Arman	Lal
<b>Contact Email:</b>	<b>Contact Phone:</b>
Arman.Lal@arb.ca.gov	916.322.4346
<b>Preliminary Submission Date:</b>	<b>Preliminary Assessment Transmittal:</b>
7/19/2021	(Include transmittal as an attachment to your email submission.)

## 2.3 Stage 2 Preliminary Assessment

### 2.3.1 Impact Assessment

	Yes	No
1. Has the Agency/state entity identified and committed subject matter experts from all business sponsors and key stakeholders?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Are all current baseline systems that will be impacted by this proposal documented and current (e.g., data classification and data exchange agreements, privacy impact assessments, design documents, data flow diagram, data dictionary, application code, architecture descriptions)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the Agency/state entity anticipate needing support from the California Department of Technology (CDT) Statewide Technology Procurement (STP) to conduct market research for this proposal (Market Survey, Request for Information)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Does the Agency/state entity anticipate submitting a budget request to support the procurement activities of this proposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Could this proposal involve the development and/or purchase of systems to support activities included in Financial Information System for California (FI\$Cal) (e.g., financial accounting, asset management, human resources, procurement/ordering, inventory management, facilities management)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Does the Agency/state entity have a designated Chief Architect or Enterprise Architect to lead the development of baseline and alternative solutions architecture descriptions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Will the Agency/state entity's Information Security Officer be involved in the development and review of any security related requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Does the Agency/state entity anticipate performing a business-based procurement to have vendors propose a solution?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 2.3.2 Business Complexity Assessment

<b>Business Complexity:</b>	2.9	<b>Business Complexity Zone:</b>	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
-----------------------------	-----	----------------------------------	--	---------------------------------	------------------------------



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

2.4 Submittal Information	
<b>Contact Information:</b>	
<b>Contact First Name:</b>	<b>Contact Last Name:</b>
Jason	Painter
<b>Contact Email:</b>	<b>Contact Phone:</b>
Jason.Painter@arb.ca.gov	916.324.0672
<b>Submission Date:</b>	<b>Project Approval Executive Transmittal:</b>
12/30/2021	(Include transmittal as an attachment to your email submission.)
<b>Submission Type:</b>	
<input type="checkbox"/> New Submission	<input type="checkbox"/> Updated Submission (Post-Approval)
<input checked="" type="checkbox"/> Updated Submission (Pre-Approval)	<input type="checkbox"/> <b>Withdraw Submission</b>
<b>Reason: Select...</b>	
<b>If "Other," specify:</b>	



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

**Sections Updated** (For Updated Submissions Only) – (check all that apply)

<input type="checkbox"/> 2.1 General Information	<input type="checkbox"/> 2.10.6 Implementation Approach
<input type="checkbox"/> 2.2 Preliminary Submittal Information	<input type="checkbox"/> 2.10.7 Architecture Information
<input type="checkbox"/> 2.3 Stage 2 Preliminary Assessment	<input type="checkbox"/> 2.11 Recommended Solution
<input type="checkbox"/> 2.3.1 Impact Assessment	<input type="checkbox"/> 2.11.1 Rationale for Selection
<input type="checkbox"/> 2.3.2 Business Complexity Assessment	<input type="checkbox"/> 2.11.2 Technical/Initial IT Project Oversight Framework Complexity Assessment
<input checked="" type="checkbox"/> 2.4 Submittal Information	<input type="checkbox"/> 2.11.3 Procurement and Staffing Strategy
<input type="checkbox"/> 2.5 Baseline Processes and Systems	<input type="checkbox"/> 2.11.4 Enterprise Architecture Alignment
<input type="checkbox"/> 2.5.1 Description	<input type="checkbox"/> 2.11.5 Project Phases
<input type="checkbox"/> 2.5.2 Business Process Workflow	<input type="checkbox"/> 2.11.6 High Level Proposed Project Schedule
<input checked="" type="checkbox"/> 2.5.3 Current Architecture Information	<input checked="" type="checkbox"/> 2.11.7 Cost Summary
<input type="checkbox"/> 2.5.4 Current Architecture Diagram	<input type="checkbox"/> 2.12 Staffing Plan
<input type="checkbox"/> 2.5.5 Security Categorization Impact Table	<input type="checkbox"/> 2.12.1 Administrative
<input type="checkbox"/> 2.6 Mid-Level Solution Requirements	<input type="checkbox"/> 2.12.2 Business Program
<input type="checkbox"/> 2.7 Assumptions and Constraints	<input type="checkbox"/> 2.12.3 Information Technology (IT)
<input type="checkbox"/> 2.8 Dependencies	<input type="checkbox"/> 2.12.4 Testing
<input type="checkbox"/> 2.9 Market Research	<input type="checkbox"/> 2.12.5 Data Conversion/Migration
<input type="checkbox"/> 2.9.1 Market Research Methodologies/Timeframes	<input type="checkbox"/> 2.12.6 Training and Organizational Change Management
<input type="checkbox"/> 2.9.2 Results of Market Research	<input type="checkbox"/> 2.12.7 Resource Capacity/Skills/Knowledge for Stage 3 Solution Development
<input type="checkbox"/> 2.10 Alternative Solutions	<input type="checkbox"/> 2.12.8 Project Management
<input type="checkbox"/> 2.10.1 Solution Type)	<input type="checkbox"/> 2.12.8.1 Project Management Maturity Assessment
<input type="checkbox"/> Recommended	<input type="checkbox"/> 2.12.8.2 Project Management Planning
<input type="checkbox"/> Alternative	<input type="checkbox"/> 2.12.9 Organization Charts
<input type="checkbox"/> 2.10.2 Name	<input type="checkbox"/> 2.13 Data Conversion/Migration
<input type="checkbox"/> 2.10.3 Description	<input type="checkbox"/> 2.14 Financial Analysis Worksheets
<input type="checkbox"/> 2.10.4 Benefit Analysis	
<input type="checkbox"/> 2.10.5 Assumptions and Constraints	

**Summary of Changes:**

The project costs have been updated to align with the BCP and reflect a more accurate representation of program costs.

**Condition(s) from Previous Stage(s):**

Condition #	....
Condition Category	Select...
Other, specify	....
Condition Sub-category	Select...
Other, specify	....
Condition	
Assessment	Select...
Other, specify	....
Agency/state Entity Response	
Status	Select...
Other, specify	....

Select + to add conditions.



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

<b>2.5 Baseline Processes and Systems</b>			
<b>2.5.1 Description</b>			
N/A			
<b>2.5.2 Business Process Workflow</b>			
N/A			
<b>2.5.3 Current Architecture Information</b>			
There is no current program or system in place for the SB 210 vehicle class criteria.			
Business Function/Process(es)			
Select + to add a business process with the same application, system, or component; COTS, MOTS, or custom solution; runtime environment; system interfaces, data center location; and security.			
Application, System or Component			
Select + to add an application, system, or component.			
COTS, MOTS or Custom			
Select...			
Name/Primary Technology:			
Runtime Environment	Cloud Computing Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes," specify: Select...
	Server/Device Function		
	Hardware		
	Operating System		
	System Software		
Select + to add system software.			
System Interfaces			
Data Center Location			
Select...			
Other, specify			
Security	Access (check all that apply)	<input type="checkbox"/> Public <input type="checkbox"/> Internal State Staff <input type="checkbox"/> External State Staff <input type="checkbox"/> Other, specify:	
	Type of Information (check all that apply)	<input type="checkbox"/> Personal <input type="checkbox"/> Health <input type="checkbox"/> Tax <input type="checkbox"/> Financial <input type="checkbox"/> Legal <input type="checkbox"/> Confidential <input type="checkbox"/> Other, specify:	
	Protective Measures (check all that apply)	<input type="checkbox"/> Technical Security <input type="checkbox"/> Identity Authorization and Authentication <input type="checkbox"/> Physical Security <input type="checkbox"/> Backup and Recovery <input type="checkbox"/> Other, specify:	
Data Management	Data Owner	Name: Greg Coburn	
		Title: ARB Supervisor	
		Business Program: Mobile Source Control Division	
	Data Custodian	Name: Rachel White	
		Title: CIO	
		Business Program: Office of Information Services	
Select + to add business functions/processes.			
<b>2.5.4 Current Architecture Diagram</b>			
Attachment: Attach file to email submission.			
<b>2.5.5 Security Categorization Impact Table</b>			
Attachment: Attach file to email submission.			
<b>SECURITY CATEGORIZATION IMPACT TABLE SUMMARY</b>			
<b>SECURITY OBJECTIVE</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Confidentiality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Integrity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Availability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## 2.6 Mid-Level Solution Requirements

Attachment: Attach file to email submission.



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

## 2.7 Assumptions and Constraints

Assumptions/Constraints	Description/Potential Impact
The FY 2022/2023 and subsequent FY's BCP's will be approved and funded in a timely manner.	Delays in BCP funding will delay contracting the Vendor's requirement to design and build the SB 210 Heavy Duty Inspection and Maintenance (HD IM) System Platform, Network and support infrastructure.
CARB will have the financial resources to support and maintain the system in the event the \$30 vehicle certification fees charged do not cover these costs in perpetuity.	Lack of support and operations funding will greatly limit CARB's ability to support the system, including bug corrections or unplanned outages, enhancements to the base functionality and adaptation to cyber threats over time.
DMV will be able to place accurate and timely registration holds on non-compliant Heavy-Duty vehicles covered under the SB 210 language, through the data exchange between CARB and DMV systems.	In the absence of registration holds being placed on non-compliant Heavy-Duty vehicles, the SB 210 objectives cannot be met.
Select + to add assumptions/constraints.	

## 2.8 Dependencies

CARB Enforcement Division (ED) Systems Development Program	The CARB Enforcement Division has a program of a projects underway in the PAL that will result in the complete build out of a statewide remote sensing and automated license plate reading network, as well as an Enforcement Decision Support system. The system will ingest remote sensing data, and related vehicle owner data to stablish an enforcement process including client correspondence and regulation compliance tracking system. All will provide critical data interfaces to and from the HD IM system.
CHP SB - 210 Inspection Violations and data interface to ED systems	CHP will have the ability to capture SB-210 Inspection violations data electronically, in a centralized location so that violation data can be interfaced automatically to the ED system on a real-time or daily basis.
DMV Interfaces to and from HD IM system	DMV must develop an interface that integrates with the HD IM system to provide accurate, complete and timely vehicle information (fuel type, owner, license plate, VIN, etc..) to the HD IM system on a daily basis. DMV must also build an automated data interface and supporting internal systems processing for ingestion of a daily "good list" of VIN'S in the HD vehicle class that should be cleared for registration or registration renewal and have been certified by the HD IM system for meeting SB-210 regulation parameters.
Heavy Duty Vehicle / Fleet owners	Success of the SB – 210 program is highly dependent on lawful participation and cooperation by vehicle and fleet owners, as it pertains to the cyclical testing, re-testing, repairs and overall compliance with the regulation once in place.
Program and project funding	The combined set of projects and inter agency development required for SB – 210 HD IM success will require, existing, future and net new funding streams to be completed. These combined efforts must remain a priority across all levels of the key stakeholder and decision-making community.
Select + to add dependencies.	



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

## 2.9 Market Research

### 2.9.1 Market Research Methodologies/Timeframes

**Methodologies Used to Perform Market Research (check all that apply):**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Request for Information (RFI)   | <input type="checkbox"/> Trade shows                     |
| <input checked="" type="checkbox"/> Internet Research   | <input checked="" type="checkbox"/> Published Literature |
| <input checked="" type="checkbox"/> Vendor Forums/Presentation  | <input type="checkbox"/> Leveraged Agreements            |
| <input checked="" type="checkbox"/> Collaboration with other Agencies/state entities or governmental entities | <input type="checkbox"/> Other, specify:                 |

**Time spent conducting market research:** Over 1 Year

**Date market research was started:** 1/1/2020

**Date all market research was completed:** 4/30/2021

### 2.9.2 Results of Market Research

The overall Market Analysis led to the conclusion that the only viable SB-210 HD IM technical solution approach is to create and post an RFP with detailed requirements for a custom developed solution. Furthermore, our findings indicate it is best to contract with a primary vendor who has current client installations that align, in part, with the general scope and magnitude of the function set required by CARB to meet the goals and objective set forth in the SB 210 HD IM. It is possible that the primary vendor will choose to contract with sub-contractors to do this. In addition, the project will be pursuing a contract that ensures the final product to be owned solely by CARB. This reduces the risk of being forced to contract with the same vendor for maintenance and operations in perpetuity.

## 2.10 Alternative Solutions

### 2.10.1 Solution Type

- Recommended**

### 2.10.2 Name

Vendor Supported and CARB Hosted Custom Built Solution

### 2.10.3 Description

While the original desire was to engage with a vendor who had a modifiable off the shelf solution for the HD IM platform, CARB market research did not provide evidence that this exists. The recommended solution is to contract with a vendor that had the ability to implement a custom solution that meets CARB's needs. Incremental development of functional releases can be planned out in accordance with the statewide, 4 phased roll out. The first phase will need to include the base application platform including the network, database, data exchanges, security and user interface layers to achieve a minimum viable product (MVP 1) for release to production. It is anticipated that this MVP 1 will include approximately 65-75% of total project scope and functionality, including vehicle information and REMES (Roadside Emissions Monitoring, and Enforcement System) and DMV interfaces. Between the first and second phases, continued development work taken from the product backlog, including all remaining interface work and the DMV will further establish CARB's ability to prepare for SB – 210 parameter enforcement . Program area focus will be on facilitation of the registration of all HD vehicles and owner information, stakeholder outreach, training and user adoption activities. The third phase will round out 100% of system functionality and inclusion of all periodic testing transactions from third party testers and vehicle/fleet owner's OBD readings being captured, in an automated fashion to the HD IM system.

**Approach (Check all that apply):**

- |                                     |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Increase staff – new or existing capabilities                         |
| <input checked="" type="checkbox"/> | Modify the existing business process or create a new business process |
| <input type="checkbox"/>            | Reduce the services or level of services provided                     |
| <input checked="" type="checkbox"/> | Utilize new or increased contracted services                          |
| <input type="checkbox"/>            | Enhance the existing IT system  |
| <input checked="" type="checkbox"/> | Create a new IT system  |



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Perform a business-based procurement to have vendors propose a solution  
 Other, specify:

## 2.10.4 Benefit Analysis

### Benefits/Advantages

This alternative reduces the risk of not meeting timeline for reduction of PM 2.5 and NOx, as required in the Senate Bill 210.

Transfers the risks involved with operation of a statewide, one-of-a-kind, Heavy Duty emission control platform, from the State of CA to 3<sup>rd</sup> party vendor(s).

Greatly reduces the number of full-time state staff that need to be hired to manage and maintain the software, hardware and network operations of the statewide system.

Results in more proactive enhancements to the system over time, leveraging industry best practices and trends made possible through knowledge garnered from Vendor's customer base.

Select + to add benefits/advantages.

### Disadvantages

Forces complete reliance on vendors to support the HD IM platform through a contracted means, as opposed to internally by State staff and management.

Provides a lesser ability to control costs through State management actions.

Select + to add disadvantages.

### Anticipated Time to Achieve Objectives After Project Go-Live

#### Objective Timeframe

Objective Number	Within 1 Year	2 Years	3 Years	4 Years	Over 4 Years
Enter No.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Select + to add objectives.

### Anticipated Time to Achieve Financial Benefits After Project Go-Live

Financial Benefit	Within 1 Year	2 Years	3 Years	4 Years	Over 4 Years
Increased Revenues	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Savings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Avoidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Recovery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 2.10.5 Assumptions and Constraints

Initial and ongoing funding streams will be identified and continue through the State budgetary lifecycle.

Project implementation activities will remain high priority for the core project team members as well as the Vendor.

Project timeline and funding streams and availability must be aligned. This can cause complexity and / or delays in project execution.

Selected vendor will perform in accordance with the terms and conditions set forth in the contract. CARB management will enforce the terms and conditions of the contract with the vendor.

Fleet and vehicle owners will abide by the regulations set forth and not devise work arounds to circumvent the program.

CHP will contribute to enforcement of the regulations for both in and out of state vehicles.

DMV will accurately place and remove registration holds on vehicles, based upon the "Good List" content provided by the HD IM system.

Select + to add assumptions/constraints

## 2.10.6 Implementation Approach

**Identify the type of existing IT system enhancement or new system proposed (check all that apply):**

Enhance the current system





# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

- Develop a new custom solution
- Purchase a Commercial off-the-Shelf (COTS) system
- Purchase or obtain a system from another government agency (Transfer)
- Subscribe to a Software as a Service (SaaS) system
- Other, specify: Vendor customized solution leveraging an existing client's platform as a starting point.

### Identify cloud services to be leveraged (check all that apply):

- Software as a Service (SaaS) provided by OTech
- Software as a Service (SaaS) provided by commercial vendor
- Platform as a Service (PaaS) provided by OTech
- Platform as a Service (PaaS) provided by commercial vendor
- Infrastructure as a Service (IaaS) provided by OTech
- Infrastructure as a Service (IaaS) provided by commercial vendor
- No cloud services will be leveraged by this alternative. Provide a description of why cloud services are not being leveraged:

### Identify who will modify the existing system or create the new system (check all that apply):

- Agency/state entity IT staff
- A vendor will be contracted
- Inter-agency agreement will be established with another governmental agency. Specify Agency name(s):  
CHP and DMV will have software development deliverables and business process activities to be performed in association with the success of the HD IM System.
- Other, specify:

### Identify the implementation strategy:

- All requirements will be addressed in this proposed project in a single implementation.
- Requirements will be addressed in incremental implementations in this proposed project.
- Some requirements will be addressed in this proposed project. The remaining requirements will be addressed at a later date.
- Specify the year when the remaining requirements will be addressed: A more robust set of interfaces will be developed by DMV during their modernization project which is scheduled to commence and 2023.

### Identify if the technology for the proposed project will be mission critical and public facing:

- The technology implemented for this proposed project will be considered mission critical and public facing.



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Business Function/Process(es)		SB210 Heavy Duty Vehicle Compliance Tracking and Management		
Select + to add a business process with the same application, system, or component; COTS, MOTS or custom solution; runtime environment; system interfaces, data center location; and security.				
Application, System or Component		Select + to add an application, system, or component.		
COTS, MOTS or Custom		Custom		
Name/Primary Technology:		Amazon Web Services (AWS)		
Runtime Environment	Cloud Computing Used?	Yes	If "Yes," specify:	Combination of IaaS, PaaS, SaaS, and FaaS
	Server/Device Function			
	Hardware	AWS IaaS, PaaS, or FaaS		
	Operating System	Windows Server or Linux		
	System Software	Select + to add system software.		
System Interfaces				
Data Center Location		AWS US-West-2 (Oregon)		
Other, specify				
Security	Access (check all that apply)	Public, Internal State Staff, External State Staff, Other: External Vendors		
	Type of Information (check all that apply)	Personal & Confidential, Financial		
	Protective Measures	Technical Security, Identity Authorization and Authentication, Backup & Recovery.		
Data Management	Data Owner	Name: Greg Coburn		
		Title: Air Resources Supervisor		
		Business Program: Mobile Source Control Division		
Data Management	Data Custodian	Name: Steve Grogan		
		Title: Chief Information Officer		
		Business Program: Office of Information Services		



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Select + to add business functions/processes.

## 2.10.1 Solution Type

**Alternative 2**

## 2.10.2 Name

Vendor built and hosted custom solution – Enhanced services

## 2.10.3 Description

With this solution, CARB would use a vendor developed and hosted solution that provides the additional functionality and program services beyond what was advertised in the mid-level requirements for additional costs. These functionality and services include OBD devices, Financial Transaction management, OBD device certification to CARB's standards, and additional Referee services, among other detailed program management functions.

**Approach** (Check all that apply):

- Increase staff – new or existing capabilities
- Modify the existing business process or create a new business process
- Reduce the services or level of services provided
- Utilize new or increased contracted services
- Enhance the existing IT system
- Create a new IT system
- Perform a business-based procurement to have vendors propose a solution
- Other, specify: \_\_\_\_\_

## 2.10.4 Benefit Analysis

### Benefits/Advantages

Select + to add benefits/advantages

## 2.10.4 Benefit Analysis

### Benefits/Advantages

CARB would receive additional program services.

### Disadvantages

Cost reimbursement would not be covered by the Senate Bill's maximum limit for annual certification fees by vehicle. It would not be in the public's best interest to choose the highest cost alternative that does not provide equivalent value.

Increased cost to implement and maintain.

Select + to add disadvantages

### Anticipated Time to Achieve Objectives After Project Go-Live

Objective Number	Objective Timeframe				
	Within 1 Year	2 Years	3 Years	4 Years	Over 4 Years
Enter No.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Select + to add objectives

### Anticipated Time to Achieve Financial Benefits After Project Go-Live

Financial Benefit	Anticipated Time to Achieve Financial Benefits After Project Go-Live				
	Within 1 Year	2 Years	3 Years	4 Years	Over 4 Years
Increased Revenues	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Savings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Avoidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost Recovery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 2.10.5 Assumptions and Constraints



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Funding for extensive build and maintenance costs will be appropriated in perpetuity.

Program will not have the need for additional services or functionality provide with Alt 2.

Cost is high and can be sourced at a later date at a more competitive cost if needed.

Select + to add assumptions/constraints

### 2.10.6 Implementation Approach

**Identify the type of existing IT system enhancement or new system proposed (check all that apply):**

- Enhance the current system
- Develop a new custom solution
- Purchase a Commercial off-the-Shelf (COTS) system
- Purchase or obtain a system from another government agency (Transfer)
- Subscribe to a Software as a Service (SaaS) system
- Other, specify:

**Identify cloud services to be leveraged (check all that apply):**

- Software as a Service (SaaS) provided by OTech
- Software as a Service (SaaS) provided by commercial vendor
- Platform as a Service (PaaS) provided by Rotech
- Platform as a Service (PaaS) provided by commercial vendor
- Infrastructure as a Service (IaaS) provided by Rotech
- Infrastructure as a Service (IaaS) provided by commercial vendor
- No cloud services will be leveraged by this alternative. Provide a description of why cloud services are not being leveraged:

**Identify who will modify the existing system or create the new system (check all that apply):**

- Agency/state entity IT staff
- A vendor will be contracted
- Inter-agency agreement will be established with another governmental agency. Specify Agency name(s):
- Other, specify:

**Identify the implementation strategy:**

- All requirements will be addressed in this proposed project in a single implementation.
- Requirements will be addressed in incremental implementations in this proposed project.
- Some requirements will be addressed in this proposed project. The remaining requirements will be addressed at a later date.  
Specify the year when the remaining requirements will be addressed:

**Identify if the technology for the proposed project will be mission critical and public facing:**

- The technology implemented for this proposed project will be considered mission critical and public facing.

### 2.10.7 Architecture Information



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Business Function/Process(es)		SB210 Vehicle Compliance Management	
Select + to add a business process with the same application, system, or component; COTS, MOTS or custom solution; runtime environment; system interfaces, data center location; and security.			
Application, System or Component		System	
Select + to add an application, system, or component.			
COTS, MOTS or Custom		Custom application	
Name/Primary Technology:		Amazon Web Services (AWS)	
Runtime Environment	Cloud Computing Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes," specify: Select...Combination of IaaS, PaaS, SaaS
	Server/Device Function		
	Hardware	AWS IaaS, PaaS, or FaaS	
	Operating System	Windows Server or Linux	
	System Software	Select + to add system software	
System Interfaces			
Data Center Location		Other AWS US-West-2 (Oregon)	
Security	Access (check all that apply)	<input checked="" type="checkbox"/> Public <input checked="" type="checkbox"/> Internal State Staff <input checked="" type="checkbox"/> External State Staff <input checked="" type="checkbox"/> Other, specify: External Vendors	
	Type of Information (check all that apply)	<input checked="" type="checkbox"/> Personal <input type="checkbox"/> Health <input type="checkbox"/> Tax <input checked="" type="checkbox"/> Financial <input type="checkbox"/> Legal <input checked="" type="checkbox"/> Confidential <input type="checkbox"/> Other, specify:	
	Protective Measures (check all that apply)	<input checked="" type="checkbox"/> Technical Security <input checked="" type="checkbox"/> Identity Authorization and Authentication <input checked="" type="checkbox"/> Physical Security <input checked="" type="checkbox"/> Backup and Recovery <input type="checkbox"/> Other, specify:	
Data Management	Data Owner	Name: Greg Coburn Title: Air Resources Supervisor Business Program: Mobile Source Control Division	
	Data Custodian	Name: Vendor Title: Vendor Business Program: Office of Information Technology	



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Select + to add business functions/processes.

## 2.11 Recommended Solution

### 2.11.1 Rationale for Selection

The overall Market Analysis led to the conclusion that the only viable SB-210 HD IM technical solution approach is to create and post an RFP with detailed requirements for a custom developed solution. Furthermore, our findings indicate it is best to contract with a primary vendor who has current client installations that align, in part, with the general scope and magnitude of the function set required by CARB to meet the goals and objective set forth in the SB 210 HD IM. It is possible that the primary vendor will choose to contract with sub-contractors to do this.

In addition, the project will be pursuing a contract that ensures the final product to be owned solely by CARB. This reduces the risk of being forced to contract with the same vendor for maintenance and operations in perpetuity.

Attachment: Attach file to email submission.

### 2.11.2 Technical/Initial CA-PMM Complexity Assessment

Complexity	Complexity Zone
Technical Complexity Score: 3.4	<input type="checkbox"/> Zone I Low Criticality/Risk
	<input type="checkbox"/> Zone II/III Medium Criticality/Risk
	<input checked="" type="checkbox"/> Zone IV High Criticality/Risk

### 2.11.3 Procurement and Staffing Strategy

#### Activity

Integration/Development

Responsible (check all that apply)	When Needed (check all that apply)	Cost Estimate Verification (check all that apply)
<input checked="" type="checkbox"/> Agency/state entity staff <input type="checkbox"/> STP staff <input checked="" type="checkbox"/> CDT Project Approvals and Oversight staff <input type="checkbox"/> CA-PMO staff <input checked="" type="checkbox"/> DGS staff <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Other, specify:	<input checked="" type="checkbox"/> Stage 3 Solution Development <input checked="" type="checkbox"/> Stage 4 Project Readiness and Approval <input checked="" type="checkbox"/> After project is approved (after Stage 4 Project Readiness and Approval)	<input type="checkbox"/> Market research conducted (MR) <input type="checkbox"/> Cost estimate provided (CE) <input type="checkbox"/> CDT CE <input type="checkbox"/> DGS CE <input checked="" type="checkbox"/> Request for Information (RFI) conducted <input type="checkbox"/> Comparable vendor services have been used on previous contracts (CV) <input type="checkbox"/> Leveraged Procurement Agreement (LPA)

#### Complete Only if Contractor Responsible for Activity

Procurement Vehicle	Formal Solicitation (IFB/ RFP)	Contract Type	Fixed Price (FP)
If "Other," specify:		If "Other," specify:	

Select + to add activities.

	Yes	No
Will any of the activities identified above result in a competitive or non-competitive solicitation that will be over the Agency/state entity's DGS delegated purchasing authority?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 2.11.4 Enterprise Architecture Alignment

The recommended alternative utilizes technologies that have been standardized enterprise-wide at CARB. The project's non-functional requirements outline processes and procedures in alignment with CARB's enterprise standards. Components of the solution will be designed for future reuse, when practical, and will reside on infrastructure that is capable of scaling to meet future needs.

## Information Technology Capability Table



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Information Technology Capability	Existing Enterprise Capability to be Leveraged	New Enterprise Capability Needed
Public or Internal Portal/Website	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public or Internal Mobile Application	<input type="checkbox"/>	<input type="checkbox"/>
Enterprise Service Bus	<input type="checkbox"/>	<input type="checkbox"/>
Identity and Access Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enterprise Content Management (including document scanning and eForms capabilities)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Business Intelligence and Data Warehousing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Master Data Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Big Data Analytics	<input type="checkbox"/>	<input checked="" type="checkbox"/>



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

2.11.5 Project Phases	
<b>Phase 1</b>	<b>Initial Platform Release</b>
<b>Description</b>	<b>Phase Deliverable</b>
Release of base platform, security module, core and admin user front end, interfaces and financial cert fee component. Availability of call center included.	Vehicle owner registration, DMV and REMES interfaces live, first preliminary Good List to DMV using RSD high emitter results, cert fee payments module, call center operational.
<b>Phase 2</b>	Complete interfaces, registration holds, Device Cert functionality
<b>Description</b>	<b>Phase Deliverable</b>
Functional deployment of DMV registration holds for non-compliant vehicles, Referee tester and Device Vendor/MFG access.	DMV registration holds for non-compliant vehicles, all interfaces in place, Referee Test result capture, Device test results capture and assessment.
<b>Phase 3</b>	Commence OBD readings submittal, Complete RSD high emitter data, 3 <sup>rd</sup> party tester network
<b>Description</b>	<b>Phase Deliverable</b>
3 <sup>rd</sup> party testers, Business Intelligence and on demand reporting available, Online certification status look up portal.	3 <sup>rd</sup> party test results capture, Reporting, Status look up portal.
<b>Phase 4</b>	OBD device list available, Business Intelligence facility, complete OBD readings data set
<b>Description</b>	<b>Phase Deliverable</b>
Certified OBD device list available to Vehicle owners, Vehicle owners submit quarterly OBD readings, Full set compliance parameters in place for Good List.	Business Intelligence facility dashboards/reports, Complete quarterly OBD data set, Full set compliance parameter Good List generation.
Select + to add project phases.	

2.11.6 High Level Proposed Project Schedule			
<b>Proposed Project Planning Start Date:</b>	4/17/2020	<b>Proposed Project Planning End Date:</b>	3/20/2023
<b>Proposed Project Start Date:</b>	3/20/2023	<b>Proposed Project End Date:</b>	10/3/2025
<b>Activity Name</b>		<b>Start Date</b>	<b>End Date</b>
<b>Stage 3 Solution Development</b>		<b>6/10/2021</b>	<b>2/25/2022</b>
Requirements		6/10/2021	12/16/2021
Solicitation Development		6/10/2021	11/3/2021
Solicitation Package Review		11/4/2021	2/4/2022
Staffing Allocation and Final SG3 approval		1/24/2022	2/25/2022
<b>Stage 4 Project Readiness and Approval</b>		<b>2/28/2022</b>	<b>3/20/2023</b>
Solicitation Release		2/28/2022	12/2/2022
Solicitation Protest Period		12/5/2022	12/9/2022
Solicitation Negotiations		12/12/2022	3/3/2023
DOF and Legistaltion Approval to proceed		3/6/2023	3/17/2023
Solicitation Award		3/20/2023	3/20/2023
<b>SB 210 HD IM Implementation</b>		<b>3/20/2023</b>	<b>10/3/2025</b>
Vendor onboarding		3/20/2023	4/14/2023
Design		4/17/2023	9/23/2023
Development		7/3/2023	4/19/2024
Testing		8/14/2023	4/26/2024





# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

User Acceptance	12/26/2023	5/31/2024
Training	2/16/2024	7/26/2024
Phase I Go-Live	2/16/2024	5/29/2024
Phase II Go Live	5/28/2024	7/26/2024
Phase III Go-Live	7/25/2024	9/24/2024
Phase IV – OBD Periodic Testing Live	5/30/2025	10/3/2025
<b>Maintenance and Operations</b>	<b>10/6/2025</b>	<b>10/1/2027</b>
Select + to add activities		

## 2.11.7 Cost Summary

Total Proposed Planning Cost:	\$7,381,849
Total Proposed Project Cost:	\$39,224,762
Total Proposed Future Operations IT Staff & OE&E Costs (Continuing):	\$11,384,061
Total Proposed Annual Future Operations IT Costs (M&O):	\$6,505,178

## 2.12 Staffing Plan

### 2.12.1 Administrative

To ensure the success of this project CARB is committing staff with extensive, high-level administrative experience in the areas of Budget and Project Management. Staff assigned to the administrative aspects of this effort have had some or all their routine work activities resigned to provide focus on the SB 210 HD IM project.

### 2.12.2 Business Program

CARB is dedicating staff to this project possessing extensive business process knowledge (project delivery, planning, management, and funding). The project’s Product Owner has many years’ experience in large scale system development projects for the Bureau of Automotive Repairs which aligns with the subject matter for emissions regulations, periodic testing, and re-certifications. Program area subject matter experts assigned also possess many years’ experience in research and implementation for multiple CARB programs that are similar such as Truck and Bus.

### 2.12.3 Information Technology (IT)

CARB is providing technical subject matter expertise and input by way of the Architectural Review Board process and through assigning members of the Enterprise Architecture, Information Security Office, and Data Intelligence units. These inputs, coupled with a contract Business Analyst and Project Manager provide a solid foundation for a team of experts to help prepare for the establishment of the HD IM program and supporting platform.

### 2.12.4 Testing

CARB is intending to hire a vendor to build the HD IM system which will include a complete Quality Assurance process using their staff. User acceptance testing will be attended by various end users both CARB and non CARB .

### 2.12.5 Data Conversion/Migration

Not applicable

### 2.12.6 Training and Organizational Change Management

In accordance with the Communications Management and Outreach plans, CARB has an internal business unit that specializes in Outreach for similar programs. The training materials and training execution will be fulfilled by the primary Vendor with assistance from the CARB Training Coordinator and HD IM Business Analyst for generation of the swim lane diagrams. Subject Matter Experts will participate in Training and Communications materials creation as needed, throughout the project lifecycle.

### 2.12.7 Resource Capacity/Skills/Knowledge for Stage 3 Solution Development



# Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

The PM, BA and Core Team members who worked dilligently on Stage 2 Alternative Analysis will continue to compile detailed requirements and procurement artifacts for development of the recommended solution. The majority of SME's are dedicated to the SB 210 HD IM Program and will mainain the time availability throughout the process.

## 2.12.8 Project Management

The contracted project manager will remain in place for the remaining PAL stage gates.

### 2.12.8.1 Project Management Risk Assessment

Project Management Risk Score: 0.9

Attachment: Attach file to email submission.

### 2.12.8.2 Project Management Planning

Are the following project management plans or project artifacts complete, approved by the designated Agency/state entity authority, and available for Department of Technology review?

Project Charter	Yes	...
Scope Management Plan	No	To be submitted with SG3
Risk Management Plan	Yes	...
Issue and Action Item Management Plan	Yes	Combined with Risk Management Plan
Communication Management Plan	Yes	...
Schedule Management Plan	No	To be submitted with SG3
Human Resource Management Plan	No	To be submitted with SG3
Staff Management Plan	Yes	
Stakeholder Management Plan	Yes	Combined with Communication Management Plan
Governance Plan	Yes	...

### 2.12.9 Organization Charts

Attachment: Attach file to email submission.

## 2.13 Data Conversion/Migration

Identify the status of each of the following data conversion/migration activities:

Data Conversion/Migration Planning	Not Applicable	Data Quality Assessment	Not Applicable
Data Conversion/Migration Requirements	Not Applicable	Data Quality Business Rules	Not Applicable
Current Environment Analysis	Not Applicable	Data Dictionaries	Not Applicable
Data Profiling	Not Applicable	Data Cleansing and Correction	Not Applicable

Attachment: Attach files to email submission.

## 2.14 Financial Analysis Worksheets

Attachment: Attach file to email submission.

### Preliminary Assessment – Department of Technology Use Only

Original "New Submission" Date	7/30/2021
Form Received Date	12/30/2021
Form Accepted Date	12/30/2021



## Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B (Rev. 2.1), Revision 5/21/2018

Form Status	Approved
Form Status Date	1/10/2022
<b>Main Form – Department of Technology Use Only</b>	
Original "New Submission" Date	7/30/2021
Form Received Date	12/30/2021
Form Accepted Date	12/30/2021
Form Status	Completed
Form Status Date	1/10/2022
Form Disposition	Approved
Form Disposition Date	1/10/2022