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| EV-CIS Deployment Plan |
| For Release Phosphorus (Release 31.0)  Version 1.0 |
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| **April 30, 2021**  Prepared by General Dynamics Information Technology, Inc. (Formerly CSRA LLC)  GDIT |



Revision History

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| --- | --- | --- | --- |
| Change Record | | | |
| Version Number | Description of Change | Change Effective Date | Change Entered By |
| 1.0 | Initial draft | 4/30/2021 | N. Rogers |

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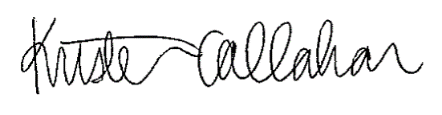
# Approval Statements

This plan has been written to identify the Production Deployment Planning activities and approach for implementation. We, the undersigned agree that this plan represents an acceptable approach to the business deployment of EV-CIS Release 31.0 to the EPA.



Nathaniel H. Rogers Date: 4/21/2021

GDIT Release Manager



Kristen Callahan Date: 4/21/2021

GDIT Task Order Manager

# Overview

## Purpose

It is the goal of GDIT and EPA to ensure that EV-CIS software Release 31.0 (Phosphorus) is made in a controlled and consistent manner to ensure a successful production deployment. This document outlines the plan for deploying EV-CIS Release 31.0 into the production environment.

## Scope

EV-CIS Release 31.0 is a major release and includes new functionality to: 1) enter, confirm, process, request and submit Maintain Manufacturer Information (MI) data to or from EPA, and 2) pull in and reuse existing MI data from certification datasets, such as contacts and locations.

It also includes new footer links in the Heavy-Duty Engines and Vehicles Submodules, as well as in the Production Volume Reporting (PVR) and Defects and Recalls modules.

The following JIRA link lists all user stories and bug fixes in Release 31.0:

[[Bugs and Stories for Release Phosphorus] Issue Navigator - EPA JIRA](https://jira.epa.gov/issues/?filter=20106)

This release involves deployment of the Manufacturer and EPA applications. New code or code changes were made to the: 1) Manufacturer application, including the Legacy Manufacturer application, PVR user interface (UI) application, PVR Service application, Engines and Vehicles Compliance Reporting Module (EV-CRM) Core Service application, Central Data Exchange (CDX) Manufacturer Information application, CDX EV-CRM application, CDX Heavy-Duty Engines and Vehicles Submodule (EVHD) application, and CDX Database; and 2) EPA application, including the Legacy EPA application, Business Rules, Common Services application, MFR EPA Service application, PVR EPA Service application, Database, and the Verify Properties File.

All Release 31.0 (Phosphorus) database scripts will be run on the production database.

# Assumptions, Constraints, Dependencies

## Assumptions

Deployment activities were designed based on the following assumptions:

* Modifications and deployments to the EPA CDX performed by another EPA contractor (CGI) will not be covered under this work effort. CGI will be deploying the EV-CIS Manufacturer applications.
* Modifications and deployments to the National Computer Center (NCC) performed by GDIT under a separate contract will not be covered under this work effort.
* There are no known issues with the source repositories hosted on https://bitbucket.epa.gov/projects/EVCIS.
* EPA will notify the Manufacturer and EPA user communities about the unavailability of EV-CIS from April 30, 2021, at 5:00 p.m. EDT until the deployment process is completed.
* EV-CIS will be unavailable from April 30, 2021, from 5:00 p.m. EDT until GDIT sends out a notification that the Release 31.0 deployment process is completed over the weekend.
* EV-CIS will be available by May 3, 2021, no later than 8:00 a.m. EDT.
* EPA will post the documents including the Software Release Notes, Data Requirements, and Business Rules for the user community.

## Constraints

Pertaining to the testing of the deployment, since scripts and procedures do not currently exist to delete the test data, GDIT will not be able to perform all regression tests in the production environment. However, GDIT will submit available datasets across industries affected by this deployment. The Automated Test Harness will be executed across all applicable industries. These datasets would be constructed so that they will fail the business rules and will not modify any existing data. This will enable testing of the Next Generation Network (NGN) communication.

As the EV-CIS architecture depends upon the CDX environment, if there is a need, CGI personnel must be readily available to support and troubleshoot any deployment-related issues with the Manufacturer Application. This availability of CGI personnel is coordinated and directed by EPA.

As the EV-CIS EPA Application is deployed by NCC, NCC must be readily available to support and troubleshoot any deployment-related issues. This availability of NCC contractor (also GDIT) personnel is coordinated and directed by EPA.

Some manufacturers may submit datasets during this deployment window. GDIT will work to ensure that these transactions are processed once the deployment is completed. However, if these cannot be processed, those manufacturers may need to contact the Help Desk to help them with their submissions.

## Dependencies

* EPA will participate in the Production Readiness Review (PRR) on April 29, 2021, which will include reviewing the testing results summary, the issues included in the release, and issues that have been postponed.
* EPA will provide final concurrence for the deployment on April 29, 2021, during the PRR.
* CDX CGI personnel will be readily available to deploy the EV-CIS Manufacturer applications.
* NCC GDIT personnel will be readily available to deploy the EV-CIS EPA application.

## Roles & Responsibilities

| **Role** | **Responsibilities** | **Resource** |
| --- | --- | --- |
| EPA Task Order Contracting Officer’s Representative | Primary EPA contact for the EV-CIS project. Accepts deliverables, provides technical direction. | Christine Mikolajczyk |
| EPA EV-CIS Project Manager/Product Owner | Primary EPA contact for overall project activities. | Sandra Somoza |
| Training Leads | Lead training and user manual activities for Manufacturers & Compliance Representatives. | EPA |
| GDIT Task Order Manager | Primary GDIT contact for the EV-CIS project. | Kristen Callahan |
| GDIT Scrum Master Lead | Lead scrum master. | Jamie Kent |
| GDIT Release Manager | Coordinates release activities for GDIT. | Nat Rogers |
| GDIT DevOps Lead | Ensures Deployment Plan is followed by all parties involved in the release. | Satya Devarapalli |
| GDIT Database Administrator | Creates and maintains the application database based on approved install procedures. | Junping Yue |
| Help Desk | Provides support to external entities for the EV-CIS system about the Release to production. | Vincent Coleman |
| GDIT Business Analysts | Conduct the PRR and submit notification to EPA on the release status. | Nat Rogers / Lucas Alderfer / Jamie Kent |
| GDIT Test Team | Conducts Installation, Operational and Performance Qualification (IQ/OQ/PQ) after applications are released into production for verification. | Matthew Abel / Monica Satoskar / Swathi Parvathala / Mason Vega |
| NCC GDIT Project Manager | Ensures that the NCC-related activities are followed in the release. | Derick Croop |
| CDX CGI Project Manager(s) | Ensures that the CDX-related activities are followed in the release. | Kyle Speight / Jake Kora |

# Procedure

## Release Decision

The decision to deploy the release to production will be an outcome of the PRR conducted prior to the deployment. This review evaluates outstanding issues, risks, available documentation, deployment schedule, deployment activities, and a Production Deployment Checklist, which supports the release decision. The outcome of the PRR will be documented in the PRR presentation by the Business Analyst.

## Plan the Release

The GDIT Release Manager will circulate this plan for review to the readiness review stakeholders, including the GDIT DevOps Lead, GDIT Task Order Manager, and GDIT Quality Lead for review. The plan includes an outline of the work required, evaluation of resources required to implement the EV-CIS Release, and includes the number and availability of staff required to support a successful deployment.

The deployable package, which includes the build artifacts and third-party checklists, will be sent to NCC and CDX.

## Implementation Strategy Approach

All release functionality will be extensively tested prior to the production deployment. Testers will verify that the applications developed by the GDIT development team meets the functional requirements and that any abnormalities or exceptions are reported in JIRA.

Developers will unit test each configured component in the development environment. The tested components will be moved to the testing environment, where components are tested by combining two or more business functions to create a valid business process or scenario, in order to verify that components work together as required.

Demos with EPA have been and will continue to be conducted to demonstrate the progress of user story implementation.

Test cases and scenarios developed by the test team will be used to validate the requirements identified in the test plan.

The Staging environment is made available to EPA and Manufacturers to perform User Acceptance Testing, as applicable. This allows for GDIT and EPA to capture feedback proactively and make modifications, dependent upon level of effort (LOE), schedule, and cost constraints.

Once EPA completes the User Acceptance Testing, an ADC code scan will be requested to be run in the NCC environment no later than one business week prior to the production release. For any minor issues discovered after the Application Deployment Checklist (ADC) code scan period, manual rescans may be requested. Similarly, an Application Programming Interface (API) Zed Attack Proxy (ZAP) scan will be requested to run in the NCC environment no later than seven business days prior to the production release. For any minor issues discovered after the API ZAP scan, manual rescans may be requested.

End-to-end testing will be performed to ensure that the system as a whole integrates with the existing infrastructure, with the pre-existing components of the overall EV-CIS architecture, and with the defined external interfaces.

Prior to deployment, GDIT informs all external entities for EV-CIS about the release to production, especially the following:

* CGI (CDX)
* GDIT (NCC)
* TATD (Testing and Advanced Technology Division)
* CARB (California Air Resources Board)

Prior to deployment, a Production Readiness Review is conducted with the EPA to receive finalized authorization for promotion to production.

Authorized promotion to production requests are performed in accordance with the GDIT Configuration Management Plan and established Configuration Management guidelines.

## Deployment Notification Process

Formal communications via e-mail will be provided by GDIT to the EPA informing them of a successful deployment after validation testing performed in the production environment.

## Contingency Plan

Staffing: As specified in the deployment process, a primary and secondary resource has been assigned for each step of the process. The available staff has been assigned specific roles for validating the deployment.

If GDIT needs to revert back to a previous release, both the database- and the application-specific files are backed up before the deployment. GDIT will also rely on the Release 31.0 (EPA application) and Release 31.0 (Manufacturer application) checklists to revert the application back if the application files cannot be restored from the backups.

The EV-CIS Manufacturer application build instructions provided to CGI will include making a backup of the existing files.

## Communications

GDIT will provide notification to EPA throughout the deployment process on the progress of the deployment. GDIT will send a formal notification via e-mail.

There will be a conference call with GDIT and NCC GDIT staff for the deployment support staff to coordinate the different deployment activities (Conference Line: (984) 444-7480, Code 617 987 042).

There will be a conference call with GDIT and CDX CGI staff on 4/27 for the deployment support staff to review CDX deployment instructions for the different deployment activities in preparation for deployment on 4/30 (ZoomGov Room: https://gdit.zoomgov.com/my/nat.rogers).

A Slack group chat will be held with GDIT deployment support staff to coordinate deployment activities and testing.

**Contact List**

| **Contact Name** | **Company Name** | **Affiliation** | **E-mail Address / Phone** |
| --- | --- | --- | --- |
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| Paula Childers | GDIT | NCC | [Childers.Paula@epa.gov](mailto:Childers.Paula@epa.gov) (919-200-7396) |
| Rudolph (Kofi) Dovlo | GDIT | NCC | [Dovlo.Rudolph@epa.gov](mailto:Dovlo.Rudolph@epa.gov) (919-767-7197 / 919-879-9224) |

# Training

## User Training

GDIT will provide demonstrations of newly developed and tested functionality to the EPA and Manufacturers, as applicable. In addition, GDIT will provide notes from the demonstrations including screen shots to EPA that can be shared internally or with Manufacturers. Newly developed and tested user functionality will also be made available in the Staging environment for hands-on learning as desired by the EPA or Manufacturers.

Manufacturer training sessions will be scheduled and conducted by the EPA, if desired.

Feedback on application issues will be shared between the EPA and GDIT for resolution/discussion.

## Support & Operations Training

EPA and GDIT will provide ongoing support to the user community through the Help Desk.

Ongoing cross-training of staff is provided by experienced team members.

GDIT internal Help Desk training will also be conducted to update support personnel regarding the functionalities of EV-CIS Release 31.0.

## Documentation

The following documents will be referenced for the deployment in addition to this document:

* NCC Release Checklist for EV-CIS Release 31.0: Includes detailed instructions to run the database scripts, business rules and EV-CIS Java applications. Checklist also includes any updates to the database roles / Lightweight Directory Access Protocol (LDAP) roles.
* Third-Party Checklist: Includes the deployment instructions for CDX on the EV-CIS Manufacturer applications’ backup, if applicable.
* The list of the document deliverables for this release will be listed in the PRR.

## Support Plan

Support requests will be received by the EV-CIS Help Desk team via phone and e-mail.

Support will be provided to:

* EPA internal EV-CIS users
* Manufacturer community

Requests received by the EPA will be forwarded to the EV-CIS Help Desk for resolution and feedback as directed.

Tiers I, II, and III Help Desk Support will continue to be provided by GDIT:

* Tier I Help Desk support includes simple requests or inquiries that the EV-CIS Help Desk team can resolve in less than two hours.
* Tier II Help Desk support includes inquiries that require detailed investigation and cannot be resolved by the EV-CIS Help Desk team in less than two hours.
* Tier III Help Desk support includes inquiries that require coordination with a member of the EV-CIS product development team to investigate or resolve.

## Supporting Technical Resources

|  |  |
| --- | --- |
| **User Support Team** | Vince Coleman  Matt Abel |
| **Developers/Testers/Analysts** | Matt Abel  Mason Vega  Satya Devarapalli  Kelvin Walter  Chau Tran  Nat Rogers  Swathi Parvathala  Monica Satoskar  Lucas Alderfer  Jamie Kent  Justin Clagg |
| **Technical Support** | Satya Devarapalli  Justin Clagg  Junping Yue |

## Procedures & Policies

All development activities are performed in accordance with established guidelines and adherence to standard operating procedures.

## Transition Plan

The software release notes (SRN) will include the manufacturer release notes that would specify the new / modified functionality for EV-CIS Release 31.0.

The Production Readiness Review (PRR) presentation will include any workarounds or any known issues for the EPA staff on the EPA Interface functionality.

The Requirements Traceability Matrix (RTM) will indicate all the functional requirements for EV-CIS Release 31.0. The EV-CIS Help Desk is updated on the new requirements and functionality associated with this release.

Any new issues identified for this release will be tracked and maintained in JIRA. The “Affects Version/s” attribute would indicate that this is an issue associated with this release. Based on the severity and the LOE, these issues will be addressed in the subsequent builds through the formal process agreed upon by EPA and GDIT.

If required, a formal meeting will be held between EPA and GDIT on May 3, 2021, to review any issues pertaining to the transition post Release 31.0.

## Third Party Release Checklists

Third party deployment checklists will be sent to CDX and NCC containing detailed deployment instructions for the Manufacturer applications and EPA Application, respectively. EPA will also be provided with the checklists. These checklists will be sent to CDX and NCC ahead of the scheduled deployment date to allow time for the appropriate parties to review the documentation. In addition, GDIT will schedule a meeting with CDX to review the Manufacturer application deployment instructions, as the Release Phosphorus deployment has some complexity and nuance that would benefit from a formal review with CDX prior to deployment.

# Risks/Issues and Mitigation Plans

|  |  |
| --- | --- |
| **Risk/Issue** | **Mitigation Plan** |
| Limited testing by EPA/Manufacturers | The Staging environment will be made available to allow sufficient time for testing. Test cases will be tested by different testers to reduce the probability that an issue goes undetected. |
| Release 31.0 might not be successfully deployed. | GDIT will have in place rollback scripts, a backup of existing application, and several controlled processes to mitigate the risk. |
| Inability to test a valid certificate in production | GDIT will have the Staging environment mimic the Production environment as much as possible. Staging will be used for testing of the valid certificates prior to the release. |
| Lack of complete automated testing coverage | Extensive testing has been performed on Release 31.0 by having incremental releases on the local server, regression tests, and testing performed by different testers for the same tests. Automated testing scripts were used to test some parts of the applications. |