Solution Acceptance -CEIR

|  |  |
| --- | --- |
| Reference: | CEIR Solution – PO DMC/2018/XI/1685 / 1686 |
| Product: | CEIR Solution |
| Product Release: | XXX |
| CP: | PO DMC/2018/XI/1685 / 1686 |
| Document Version: | 0.1 |
| Audience: | DMC Ltd. |
| Abstract: | This document defines the Solution Acceptance Procedure for CEIR solution deliverables |
|  | |

NON-PRINTING REMINDER: To configure book:

File -> Properties -> Summary -> Edit the Title -> OK

File -> Properties -> Custom -> Edit Audience, Product, Reference, Release, Version -> OK

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# Introduction

As a part of the PO DMC/2018/XI/1685 and PO DMC/2018/XI/1686, Sterlite has entered into an agreement with DMC to deploy a technical solution for Central Equipment Identify registration (CEIR) to cover all SIM based devices in Cambodia.

In order for DMC to be able to achieve its business objective, Sterlite has delivered a turnkey solution, with a customized software developed and associated hardware, hereafter referred to as the CEIR solution suite

The overall solution is a turnkey solution and involves the following deliverables.

1. Infrastructure planning
2. Hardware, software delivery and installation
3. Software development and customization
4. Support and Maintenance
5. Operational procedures
6. CEIR Solution Reports

All the relevant details related to the above deliverables are described in detail in the next sections.

Sterlite is responsible for the overall deployment of the infrastructure and hardware, and is also responsible for the development of the appropriate software and customization of their CEIR solution to meet the objective defined in the PO DMC/2018/XI/1685 and PO DMC/2018/XI/1686 and SRS.

After the successful completion of all the related deliverables, DMC hereby is requested to accept the solution implemented for CEIR. This is hereby referred to as “Solution Acceptance”.

This Solution Acceptance is restricted to the PO DMC/2018/XI/1685 and PO DMC/2018/XI/1686, also referred to as “CEIR Solution”.

# Infrastructure planning

As a part of the turnkey solution, Sterlite has the end-to-end responsibility starting from planning the infrastructure to the installation followed by joint acknowledgement with DMC. The various aspects involved in the Infrastructure planning are summarized below.

## Infrastructure planning procedure

The infrastructure planning procedure contains summary of the infrastructure and delivery checklist.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document**  **version** |
| 1 | Infrastructure planning procedure | 2019\_05\_02\_Infrastructure Delivery For DMC\_Mediation\_Reporting &EIR – version 4.0 |

## Infrastructure setup acceptance

This section lists the acceptance of the infrastructure setup.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document**  **version** |
| 1 | Infrastructure setup acceptance | 2019\_05\_02\_Infrastructure Delivery For DMC\_Mediation\_Reporting &EIR – version 4.0 |

This document contains the following

1. Mediation Collection Server details
2. Database Server details
3. BI Reporting Server details
4. EIR Portal Server details
5. EIR Application Server details
6. EIR Signalling Server details
7. EIR Reporting Server details
8. Backup Server details
9. SAN Storage details
10. TAPE Library details
11. Switches details
12. Backup & Recovery software details

# Hardware, software delivery and installation

## Hardware (“HW”) delivery

This section describes the documents that are needed for the HW to be shipped and customs cleared, as defined in the shipping procedure.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Shipping procedure | 2019\_05\_02\_Infrastructure Delivery For DMC\_Mediation\_Reporting &EIR – version 4.0 |
| 2 | Master list |
| 3 | Shipping invoice and packing list |
| 4 | Bill of lading |
| 5 | Marine insurance certificate |
| 6 | Inland insurance |

The HW acknowledgement of receipt is a document which is to be signed off by DMC to acknowledge that all the relevant HW equipment has been delivered in accordance with the signed CP and the master list.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Acknowledgment of receipt for hardware | 2019\_05\_02\_Infrastructure Delivery For DMC\_Mediation\_Reporting &EIR – version 4.0 |

## Software (“SW”) delivery

As a part of the CEIR Solution the list of software that has been delivered and installed in accordance with the signed CP and the master list is listed in the document below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document Version** |
| 1 | Acknowledgement of receipt for Software | 1. DMC Milestone Signoff 2. License and Annexure |

## Hardware (“HW”) installation and acceptance test procedure

* + 1. **Installation procedures**

Receipt of the HW is followed by the physical installation of the HW. The procedures listed in the table below give the detailed steps to be followed for the installation of the HW.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | HP hardware installation document | 2019\_05\_02\_Infrastructure Delivery For DMC\_Mediation\_Reporting &EIR – version 4.0 |
| 2 | Hitachi Hardware installation document |

* + 1. **Acceptance test procedures**

This section lists the acceptance test procedure for the HW.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | HP hardware user acceptance test (UAT) procedure | Deployment Preparation Worksheet\_v3.1 |
| 2 | Hitachi user acceptance test (UAT) procedure |

* + 1. **Hardware acceptance results**

The results of the acceptance test procedure as defined in section 3.3.2 are documented below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | HP hardware user acceptance test (UAT) results | Deployment Preparation Worksheet\_v3.1 |
| 2 | Hitachi switches user acceptance test (UAT) results |

## Hardware manuals

As a part of the solution acceptance the relevant HW user manuals are available on the below given links. These links will help DMC operations team to carry out preventive maintenance of the HW. The DMC operations team may also use these links to support them for troubleshooting in case of any issues.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **URL** |
| 1 | HP Manuals | [HPE ProLiant DL360 Gen10 Server User Guide (etilize.com)](https://content.etilize.com/User-Manual/1059281000.pdf)  [HP PROLIANT DL360 GEN10 USER MANUAL Pdf Download | ManualsLib](https://www.manualslib.com/manual/1334581/Hp-Proliant-Dl360-Gen10.html)  <https://content.etilize.com/User-Manual/1040914965.pdf>  [HPE PROLIANT DL380 GEN10 USER MANUAL Pdf Download | ManualsLib](https://www.manualslib.com/manual/1866439/Hpe-Proliant-Dl380-Gen10.html) |
| 2 | Hitachi Manuals | [Hitachi TrueCopy® User Guide for VSP G series and VSP F series (hitachivantara.com)](https://download.hitachivantara.com/download/epcra/rd801910.pdf)  [Virtual Storage Platform Storage Navigator User Guide - Hitachi Vantara Knowledge](https://knowledge.hitachivantara.com/Documents/Storage/Virtual_Storage_Platform/Administer_a_VSP_system/Virtual_Storage_Platform_Storage_Navigator_User_Guide)  [Hitachi Virtual Storage Platform (VSP) G Series | Hitachi Vantara](https://www.hitachivantara.com/en-us/products/storage/flash-storage/mid-range/vsp-g-series.html) |

# Software development for CEIR

This software solution comprises of 4 major parts

* + Sterlite proprietary product
  + Software development for specific operators for CDR processing.
  + Software development for various stakeholders
  + Reporting subsystem

For CDR Processing, the integration is done with Sterlite mediation system for processing the same. There are 2 different formats supported for 19 different sources across 4 operators

Various stakeholders. interact with CEIR software over web GUI to achieve certain functionality. The list of stakeholders is as follows:

1. Importer
2. Distributor
3. Retailer
4. TRC
5. Customs
6. Manufacturer
7. Lawful Agency
8. Mobile Operators
9. End User
10. Customer Care
11. System Admin
12. CEIR Admin
13. Operations User

The system is integrated over API/ftp-based mechanism with the following system.

1. Sterlite Mediation system
2. PRTG
3. Email system
4. SMS system
5. GSMA system

This software is refined over a period of time to enable DMC to address all the key requirement of the various stakeholders.

## Sterlite software solution

* The proprietary software consists of the following key modules:
  + Signaling Module: The function of the module is to collect the CDR’s from the mediation system and process and build the active IMEI database.
  + Portal Module: The portal module supports all the workflows required by different stakeholders to achieve the various functionality.
  + Reporting Module: This module generates the report and store it in the database. The report can be later viewed using the portal module.

This section lists the documents that describe in detail the operation of the CEIR software. There are standard product guides that are delivered as a part of the deliverables by Sterlite. This will be used by DMC as reference documents.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Software Requirement Specification document | 2.0 |
| 2 | Approach Document for Solution Finalization | 1.0 |
| 3 | Approach Document between CDR and OTA | 0.2 |
| 4 | Approach Document between Importer and Customs | 1.0 |
| 5 | Signalling server integration document with Mediation | 0.5 |
| 6 | High Level design document | 0.3 |
| 7 | SMS Integration document | NA |
| 8 | Email Integration document | NA |
| 9 | CEIR Connectivity for SSL Implementation | 1.0 |
| 10 | Implementation Details for CEIR Software | 1.0 |
| 11 | Installation document for Third party software | 0.1 |
| 12 | Sterlite\_User\_Guide\_1.0\_Portal Server | 1.0 |
| 13 | Sterlite\_User\_Guide\_1.0\_CEIR | 1.0 |
| 14 | Sterlite\_Policy\_document | 0.6 |
| 15 | Campaign awareness document | 0.1 |
| 16 | Signaling Server Process | 0.7 |
| 17 | DMC\_CEIR\_FieldValidations\_DMC comment 20210202\_STL | 0.4 |

* + 1. **Software development and customization for operators and other stakeholders**

Using the proprietary Sterlite product, a customized software solution is developed and is dependent on the data sources identified at the operator level. As a part of the software delivery, Sterlite follows a standard development process.

For every operator the software development process consists of the following 6 steps. This will ensure that the overall solution developed is consistent and will lead to accurate reports being generated.

* Approach Document: This is the starting point for STL to initiate the stakeholder specific software development and the overall solution design.
* Specification document: This specifies the software customization needed to process the operator data sources, interfaces development for other stakeholders like to capture the SIM based devices information in Cambodia.
* GSMA other Specification document: This document contains the information for stakeholder with which system is integrated. The document defines the development rules for the software solution and is used as a basis for Sterlite to develop the software solution for the CEIR solution.
* Software development: The operator specific software and other stakeholders’ specific software is developed based on the stakeholder specific specifications documents.
* Software Test plan: A comprehensive test cases were prepared to validate the functionality of the software developed. These test cases are jointly executed between Sterlite and DMC. Every successful test case is validated and signed off by Sterlite and DMC.
* Software test in production system: Sterlite and DMC have validated 4 months data processed in the production system successfully.  
  + - 1. **Importer specific technical documents**

All the deliverables for the software solution for the Importer are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Importer | 0.7 |
| 2 | CEIR Test Case Document for Importer/Retailer/Distributor User | 3.1 |
| 3 | Importer Feature Overview | 2.0 |
| 4 | CEIR User Manual for Importer User | 1.0 |
| 5 | Consignment training manual | 2.0 |
| 6 | Stock Management training manual | 2.0 |
| 7 | Grievance feature overview | 2.0 |
| 8 | Type Approval Feature | 2.0 |

* + - 1. **Distributor specific technical documents**

All the deliverables for the software solution for Distributor interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Distributor User | 0.2 |
| 2 | Distributor Feature Overview | 2.0 |
| 3 | CEIR User Manual for Distributor User | 1.0 |

* + - 1. **Retailer specific technical documents**

All the deliverables for the software solution for Retailer interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Retailer Feature Overview | 2.0 |
| 2 | CEIR User Manual for Retailer User | 1.0 |

* + - 1. **TRC specific technical documents**

All the deliverables for the software solution for TRC interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for TRC | 0.2 |
| 2 | CEIR Test Case Document for TRC User | 3.1 |
| 3 | TRC Feature Overview | 2.0 |
| 4 | CEIR User Manual for TRC User | 1.0 |

* + - 1. **Manufacturer specific technical documents**

All the deliverables for the software solution for manufacturer interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Manufacturer | 0.2 |
| 2 | CEIR Test Case Document for Manufacturer User | 3.1 |
| 3 | Manufacturer Feature Overview | 2.0 |
| 4 | CEIR User Manual for Manufacturer User | 1.0 |

* + - 1. **Mobile Operator specific technical documents**

All the deliverables for the software solution for the mobile operator are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Questionnaire Document For operator | 0.8 |
| 2 | Design Document for Mobile Operator User | 0.3 |
| 3 | CEIR Test Strategy and Planning Document | 0.1 |
| 4 | CEIR Test Case Document for Operator user | 4.0 |
| 5 | Operator Feature Overview | 2.0 |
| 6 | CEIR User Manual for Operator User | 1.0 |
| 7 | Block Unblock Feature Overview | 2.0 |
| 8 | Greylist feature overview | 2.0 |
| 9 | Blacklist feature overview | 2.0 |

* + - 1. **Customs specific technical documents**

All the deliverables for the software solution for Customs user interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Customs | 0.2 |
| 2 | CEIR Test Case Document for Customs User | 3.1 |
| 3 | Customs Feature Overview | 2.0 |
| 4 | CEIR User Manual for Customs User | 1.0 |
| 5 | Register Device Overview | 2.0 |

* + - 1. **Lawful Agency specific technical documents**

All the deliverables for the software solution for Lawful Agency interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Lawful User | 0.2 |
| 2 | CEIR Test Case Document for Lawful User | 3.2 |
| 3 | Lawful Agency User Feature Overview | 2.0 |
| 4 | CEIR User Manual for Lawful Agency User | 1.0 |
| 5 | Stolen and Recovery training manual | 2.0 |

* + - 1. **End User specific technical documents**

All the deliverables for the software solution for End user interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for End User | 0.2 |
| 2 | CEIR Test Case Document for End User | 3.1 |
| 3 | End User Feature Overview | 2.0 |
| 4 | CEIR User Manual for End User | 1.0 |
| 5 | Update Visa training manual | 2.0 |
| 6 | Check IMEI | 2.0 |

* + - 1. **GSMA specific technical documents**

All the deliverables for the software solution for GSMA interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for GSMA user | 0.5 |
| 2 | GSMA API Document for Device Check (Blacklist) | NA |
| 3 | GSMA API Document for Device Check (TAC) | NA |
| 4 | CEIR Test Case Document for GSMA User | 3.1 |
| 5 | GSMA Overview | 2.0 |

* + - 1. **System Admin specific technical documents**

All the deliverables for the software solution for System admin interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | CEIR Test Case Document for System Admin User | 4.0 |
| 2 | System Admin Feature Overview | 2.0 |
| 3 | CEIR User Manual for System Admin User | 1.0 |

* + - 1. **CEIR Admin specific technical documents**

All the deliverables for the software solution for CEIR Admin interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | CEIR Test Case Document for CEIR Admin User | 4.0 |
| 2 | CEIR Admin Feature Overview | 1.0 |
| 3 | CEIR User Manual for CEIR Admin User | 1.0 |
| 4 | User Management Feature Overview | 2.0 |

* + - 1. **Customer Care specific technical documents**

All the deliverables for the software solution for customer care interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design document for Customer Care | 0.2 |
| 2 | CEIR Test Case Document for Customer Care User | 3.1 |
| 3 | Customer Care Feature Overview | 2.0 |
| 4 | CEIR User Manual for Customer Care User | 1.0 |

* + - 1. **Operations User specific technical documents**

All the deliverables for the software solution for Operation User interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | CEIR Test Case Document for Operations User | 4.0 |
| 2 | Operations Feature Overview | 2.0 |
| 3 | CEIR User Manual for Operations User | 1.0 |

* + - 1. **Immigration User specific technical documents**

All the deliverables for the software solution for Immigration User interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Design Document for Immigration User | 0.4 |
| 2 | CEIR Test Case Document for Immigration User | 4.0 |
| 3 | Immigration Feature Overview | 2.0 |
| 4 | CEIR User Manual for Immigration User | 1.0 |

* + - 1. **CDR Processing specific technical documents**

All the deliverables for the software solution for CDR Processing interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | CEIR Test Case Document for ETL (CDR Processing) | 2.0 |
| 2 | ETL Overview | 2.0 |

* + - 1. **PRTG specific technical documents**

All the deliverables for the software solution for PRTG interface are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | PRTG Integration document | 0.2 |

* + - 1. **Redundancy and Alerts technical documents**

All the deliverables for the software solution for redundancy and alerts are listed below.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Alert Configuration Sheet | 1.0 |
| 2 | CEIR\_ST\_TestCases\_Redundancy\_V3\_0 | 3.0 |

# Operational procedures

A set of important documents are shared with DMC and will describe the methodology of the software development and usage of the software and processes.

These documents are briefly described below.

* System security: Describes the various steps to be taken to ensure the DMC production system is secure from external attacks.
* Backup and restore list: Backups are needed to ensure that we are able to recover the data in case of any emergencies. This is needed to ensure that there is no loss of data.
* DB Manual: This document describes all the tables in the DB.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | E-SIG-01\_Server Hardening\_v1.2 | 1.2 |
|  | E-SIG-02\_Server Hardening\_v1.2 | 1.2 |
| 2 | DB Manual | 1.0 |
| 3 | Backup and Restore list | 1.0 |

# CEIR Solution Reports

The final step of the CEIR project is the delivery of the CEIR Reports for all SIM based devices in Cambodia, as part of the CP.

The reporting template encompasses 4 (count) main categories of reports: The report provides qualitative and quantitative insights into the SIM based device market data in Cambodia, which includes Active devices information, whitelisted devices information, blacklisted devices information, grey listed devices information, stolen devices information etc.

The document listed below is copied on the shared drive in CEIR folder.

|  |  |  |
| --- | --- | --- |
| **No.** | **Documents** | **Document version** |
| 1 | Report\_TestCases\_V2\_0 | 2.0 |
| 2 | Reporting Design Document | 2.0 |
| 3 | Sterlite Reporting Document | 2.0 |

# Solution Acceptance signoff

This is to acknowledge that deliverables highlighted in this document is in accordance with DMC’s expectations. All the deliverables that are mentioned in this document have been received and accepted by DMC.

|  |  |
| --- | --- |
| Customer Name | DMC Ltd. |
| Project Number | CP Numbers |
| Project Description | Sterlite CEIR Solution |

|  |  |  |
| --- | --- | --- |
| **Sterlite Project Manager** | Name: | **Shyam Sunder Garg** |
| Signature: |  |
| Date: |  |
| **DMC Project Manager** | Name: | **Rajneesh Katoch** |
| Signature: |  |
| Date: |  |
| **DMC R&D Manager** | Name: | **Pradeep Sharma** |
|  | Signature: |  |
|  | Date: |  |
| **DMC Operations Manager** | Name: | **Oum Sophal** |
|  | Signature: |  |
|  | Date: |  |
| **DMC IT and Security Manager** | Name: | **Yuksithikyuth Sok** |
|  | Signature: |  |
|  | Date: |  |
| **DMC Deputy General Manager** | Name: | **Dina Yoeurn** |
|  | Signature: |  |
|  | Date: |  |
| **DMC General Manager** | Name: | **Biloliddin Nuriddinov** |
|  | Signature: |  |
|  | Date: |  |

# Annex 1



End of Document