RED ROSE ONEsolution Overview

Overview

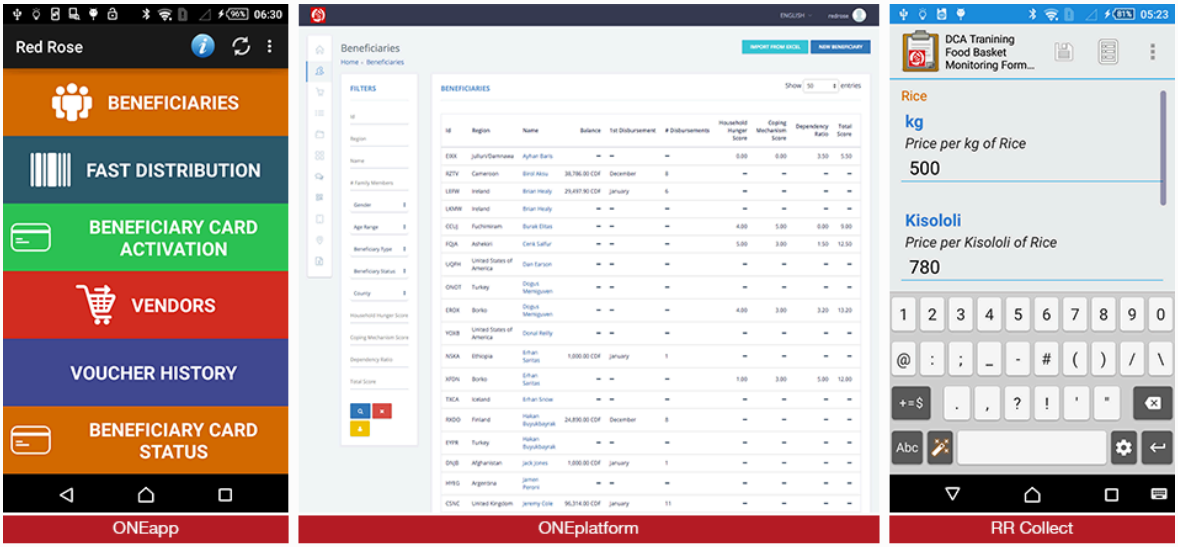
Red Rose is a secure, easy to use, digital software platform that enables Humanitarian organisations to manage all their programs to improve operational efficiency and ensure programs remain relevant and fit for purpose.

- Understand the key-features of Red Rose ONEsolution
- Learn how the RedRose ONEsolution operates

Content:

- ONEsolution Software & Hardware
- ONEplatform Features
- ONEsolution Architecture

ONEsolution Software & Hardware



Software

ONEsolution consists of seamlessly integrated software tools utilizing different types of hardware. There are three main software components;

1. **ONEplatform** : Web-Based Information Management System
2. **ONEapp:** Multi-purpose App for Android devices for both Offline and Online
3. **RR Collect:** Data-collection App for Android devices (compatible with ODK and XlsForm), can be used both Offline and Online

Hardware

The main hardware required to run ONEapp and RR Collect is an Android device. Both apps are compatible with Android version 4.2.2 (released 2013) and above.

The following technologies of Android devices are utilized;

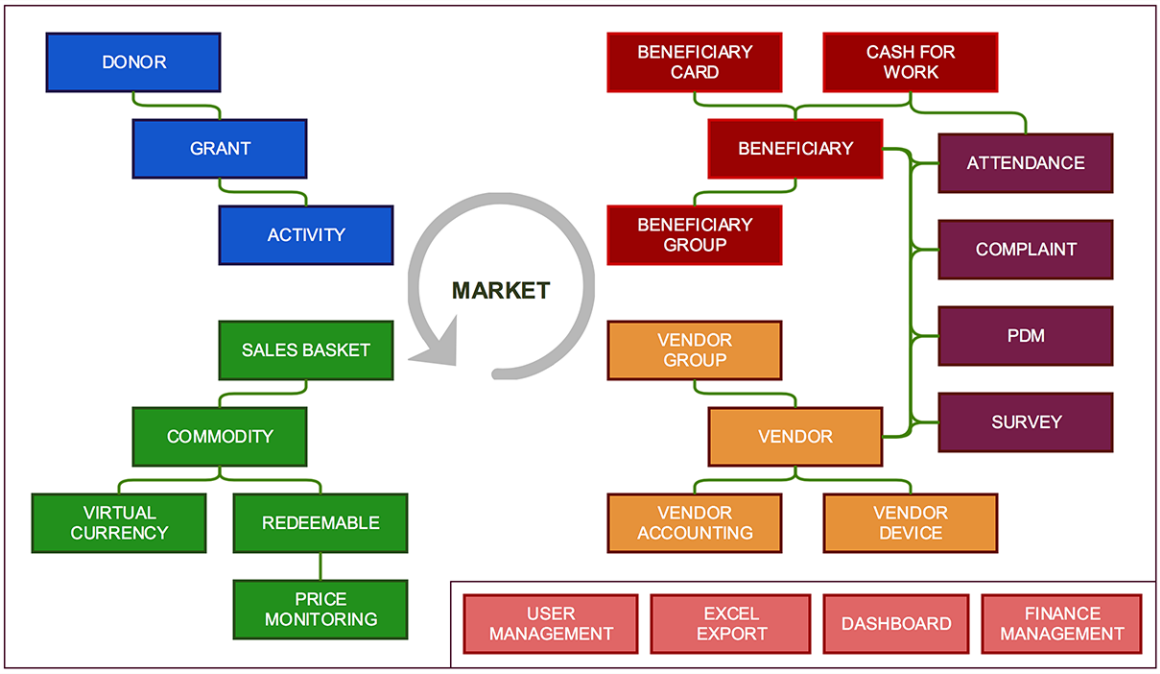
- **NFC (Near Field Communication)**: For e-Voucher (Smart-Card) projects NFC enables contactless communication and secure exchange of data between a smart card and the Android device (necessary for securely storing beneficiary balances within multiple balances in offline)
- **Bluetooth**: Utilized for communicating wirelessly with peripheral hardware like barcode scanners, printers etc.
- **2G/3G/LTE/Wi-Fi**: All possible connectivity methods are utilized and selected automatically depending on their availability for synchronizing data to the ONEplatform. Standard transactional data that is required to be transferred from the devices to the ONEplatform is normally very small in size, and can be even transferred by 2G networks without any problems.
- **GPS**: GPS can optionally be used for registering coordinates of any event like registration, sales, attendance, on-site tracking, PDM's, complaints etc.

There are some optional hardware that can be used for different purposes;

- **Mobile Bluetooth Printer**: Good for printing customizable receipts on thermal paper in any language, has its own battery and is very durable and portable
- **Barcode Scanner**: Good for scanning any barcode for distribution and tracking purposes, can scan 1D/2D barcodes, has its own battery and is portable

- **Biometrics**: Good for verifying beneficiaries identity within the ONEplatform. Fingerprints or Iris data can be enrolled within ONEplatform and utilized later on.
- **ID Scanners**: Good for reading/digitizing Passports, National Identity Cards, etc.
- **Desktop Voucher Scanner**: Good for bulk scanning/sorting of paper-vouchers for automatic reconciliation of 200 paper vouchers per minute.
- **Smart Card (e-Voucher)**: Used as an identity product, can be customised with logos, photo of the beneficiary and any data fields including beneficiary name, next of kin, communities etc. and can securely hold multi-wallet balance data digitally. Verification of each smart card is via a 4 digit PIN, which can be numerical or in colour for illiterate population groups, this is inputed by the beneficiary at point-of-sale.

ONEplatform Features



There are four key features within the RedRose ONEsolution;

1. **Sources of Funds**: Donors (i.e. USAID, DFID, ECHO, Public etc.), Grants (i.e. your organizations Projects or Budget Lines etc.)
2. **Commodities**: All items that can be tracked and redeemed within the ONEsolution including; goods, food, NFI's, cash, virtual currencies etc.
3. **Beneficiaries**: Managed profiles of people benefiting from the system.
4. **Vendors**: Managed profiles of people, shops, agents, distribution points etc.

Once these above entities have been setup, the ONEplatform can **record and report all the transactions** happening in the **Market** including full line item details (i.e. **who bought how much of what product at which vendor and at what time**)

Within ONEplatform there are additional **built-in functionalities** for further utilization of the data:

- **Surveys**: With the help of RR Collect App, any type of data-collection survey can be implemented. Within the RedRose ONEplatform there are built-in customisable surveys for the following tasks
  - Beneficiary Registration (with ability to decide on eligibility in offline and record the delivery of any item at the same time as registration)
  - Complaint registration
  - Post Distribution Monitoring (PDM's)
  - Distribution Monitoring (DM)
  - Price Monitoring
  - Generic Surveys
- **Dashboards**: Displays Key Performance Indicators (KPIs) with graphs, charts, tables etc. in real or near real-time. There are different perspectives focusing into different entities and their metrics within ONEplatform;
  - Beneficiary Dashboards
  - Vendor Dashboards
  - Transaction Dashboards
  - Market Dashboards
- **Excel Export**: ONEplatform can export any data stored in its database to Excel for further data analysis. These reports contain cross-references of entities and can be enriched by the collected survey data.
- **Finance Management**: ONEplatform includes segregation of duty for users and has a **request/approval** mechanism for each of the different financial requests like allocation of funds, setting spending limits, making payments etc.
- **User Management**: Within ONEplatform it is possible to control which user has access to different sections of the data and which user is able to perform certain actions in a very fine-grained manner.

Donors -> Grants -> Activities

- ONEplatform can track **multiple Activities** originated from *multiple Donors and Donor Grants*.
- There can be **any number of Donors**
- There can be **one or many Grants** from any Donor or Donors
- There can be **one or many Activities** from any Donor Grant with **multiple modalities**, sector (FSL, WASH, Shelter etc.) and types.
- ONEplatform can track the following Activity types:
  - **E-Vouchers**
    - Currency Values
    - In-Kind Values
  - **Pre-Paid Cards (MasterCard)**
  - **Paper Vouchers**
    - Booklets or Individual Vouchers
    - Vouchers with Currency Denominations
    - Commodity Vouchers
  - **Distribution Lists (QR Codes or Barcodes)**
    - In-Kind
    - Cash in Envelope
  - **SMS Mobile Money**
    - Close-Loop
    - Open-Loop Integrated
  - **Cash for Work**
  - **Attendance**
  - **On-site verifications**

Commodities

- Inside the ONEplatform a **Commodity** can equate to both **Currency** or Quantity of a valued item, with a **Single or Multiple Units**
- In a closed-loop operation the ONEplatform **1:1 virtualizes the Local Currency** for electronical exchange between entities.
- There are two main types of Commodities;

1. **Virtual Currency**: Is the main monetary value tracked within the ONEplatform (usually the local currency of the mission)
2. **Redeemable items**: All the items that the credits distributed (e.g. currency or quantity) can be redeemed for like Food, Clothing, Cash etc.

Sales Baskets

- **Any number of Sales Baskets** can be generated with different levels of control of the **market.** **R**anging from **very loose** with low M&E (monitoring and evaluation) data to **very sophisticated** control (fully imposed price control with ranges and per vendor enablement of commodities) with detailed M&E data
- Sales Baskets can contain **Cash** distributions; (for Money Agents, Hawala etc.)
- Sales Baskets can be categorised (i.e. Food, Wash, NFI etc.)
- For any Commodity **Multiple Units** can be tracked (kg., ltr., tonne etc.) and **Local Units** are also supported (kolba, mudu, kisolili, murongo etc.)
- Price Control can be achieved using Sales Baskets. There are **4 ways of pricing** for any commodity in any basket;
    - **Free Market Pricing**: Vendors are free to decide on the price of their goods
    - **Recommended Market Prices**: Vendors are offered a Price but still can decide on any price
    - **Price Market Ranges**: Vendors are limited to a Range of Price per Commodity per Unit
    - **Fixed Market Prices**: Vendors can only at Pre-Defined Prices for each Commodity Unit

Price Monitoring

- ONEplatform **automatically generates** Price Monitoring Forms for any Sales Basket
- Price Monitoring forms can assess the following;
    - **Participating and Non-Participating Vendors'** Prices
    - **Product Availability** per Vendor
    - **Unit Prices** per Commodity in **Multiple Units**
    - **How many transactions a vendor makes each day**
    - **How many beneficiaries a vendor serves each day**
    - Registers **GPS Coordinates** (optionally) for visualising prices on a **Map**
- Price Monitoring Forms **can be customised** to include more assessment questions

Vendors

- ONEplatform enables **Assessment and Registration** of Vendors
- All **Vendor Transactions** and **Accounting** can be managed within ONEplatform
- Vendors can hold devices (Android phones/tablets) and their synchronization status can be tracked within the ONEplatform

Beneficiaries

- Each **Beneficiary** or **Household** is assigned a unique **profile** within the ONEplatform
- For each profile the following can be managed within the ONEplatform;
  - **Registration Details**: Data for any number and type of fields including Photo, Fingerprint/Iris (Biometrics), GPS Coordinates, Photo, Signatures etc. These information can be imported from existing sources of organization or can be collected using RR Collect App
  - **Surveys**: There can be any number of linked surveys to any beneficiary profile including PDMs, Complaint Registration, and Beneficiary Information Update etc.
  - **Assistance**: At any time all the allocations (reservations) to any profile and their redemptions can be monitored; beneficiary balances can be tracked
  - **Transactions**: All details of each transaction made by beneficiary can be accessed from the profile including; time, vendor, item details; GPS etc.
  - **Attendance**: Entry/Exit events to different sites (training, work-site, schools etc.) with optional pictures and GPS coordinates can be stored and viewed within Beneficiary Profile.
  - **Complaints**: Beneficiary complaints and history of actions related to each complaint can be tracked within a Beneficiary Profile.
- Beneficiary Identities can be accessed/managed/secured by using different identity products/features;
  - **Smart-Cards (e-Vouchers)**: Electronic cards with a built-in secure memory and able to hold multi-wallets [22 wallets in standard smart card]
  - **QR Codes/Barcodes**: Paper cards or lists with unique barcodes for identifying beneficiaries quickly and conveniently
  - **Phone Numbers**: Mobile numbers can be linked to beneficiary profiles and can be utilized for making transactions, complaint registration, SMS texts etc.
  - **PIN numbers**: Each beneficiary is assigned a unique PIN number for making transactions. PIN numbers by default consists of 4 numerical digits, but in a

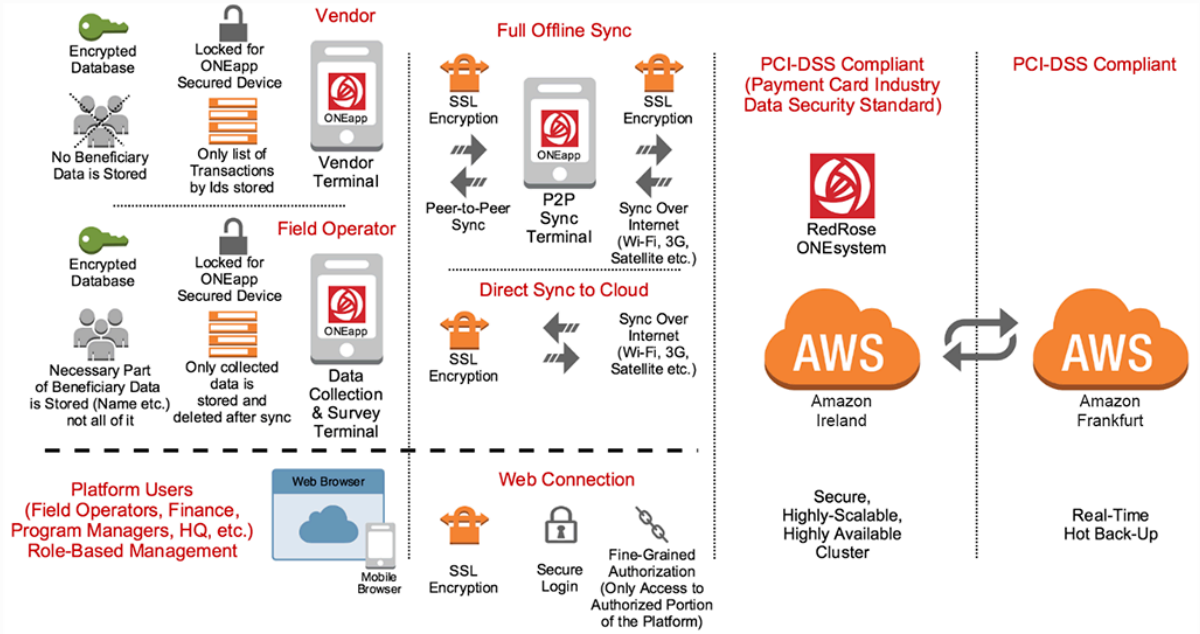
context with low literacy the PINS can also be sequences of symbols or colors etc.

- **Biometrics**: Fingerprint or Iris data can be used to verify a beneficiaries identity

Beneficiary & Vendor Groups

- Beneficiaries and Vendors can be grouped **manually** or **by one or using other criteria** for easier and bulk management.
- There can be **any number** of Beneficiary or Vendor Groups
- Groups can contain **any number of profiles**
- Groups can be based on **geographical segmentation, criteria filters** (age ranges, scores or specific metrics etc.)

ONEsolution Architecture



Where is the Data Stored and How it is Served?

- ONEsolution is served on a **Software-as-a-Service (SaaS)** model where all the **infrastructure is managed** by RedRose.
- Red Rose hosts each mission on an **isolated instance** in **AWS** (Amazon Web Services, no.1 global IT infrastructure provider)
- Red Rose uses **Amazon Ireland** as the main data center and uses **Amazon Frankfurt** as a 1:1 backup of that. (Unless something else is required by

organization (i.e. organizations want to manage their own servers) or regulations of countries do not allow to store data outside of their country this is the default setup.)

- Once information is synced to the main servers, all the ONEsolution data is stored and processed **within the parimeters of the EU**.
- ONEsolution architecture utilizes the cloud capabilities of AWS for securely serving a **highly-available and scalable** service so organizations can benefit from accessing mission data at**anytime/anywhere** rapidly and reliably.
- ONEplatform is compliant with **PCI-DSS** (Payment Card Industry - Data Security Standard), which is the defacto security standard for organizations doing online financial transactions.

What are the Security Measures Involved?

- **Security** of data and communications is our **No.1 priority** in the design of ONEsolution. All of the components of the ONEsolution include different standards based upon **high level security** mechanisms.
- Red Rose **ONEcard** (smart cards) is based on the same chip that is used in modern transportation systems like London's Oyster Card with the same levels of security. It features a **multi-wallet, with a securely accessible memory** using any Android device with NFC.
- Red Rose ONEapp uses a uniquely keyed **AES256 encrypted** database on Android, and has a data storage strategy of not holding any data, which is not absolutely necessary for the usage purpose. For example;
    - Vendor devices do **not have any access to beneficiary data** and do not store any portion of it. They just store card id's and transaction amounts.
    - Field staff devices can process sensitive data (mainly they collect it) but once it is **synced safely** that data **automatically gets wiped**.
- For extended security, Android devices in the field are **locked for purpose**; only allowing the use of ONEapp or RR Collect and **block** all other features of the Android device like browsing web, making calls, playing games etc. This feature and policies can be **managed centrally**.
- ONEplatform features secure logins with **personal username/password pairs,** which can be further secured by **OTP** (one-time-passwords sent as SMS) or other two-step authentication methods.
- ONEplatform and ONEapp both feature many **levels of authorities** for accessing, modifying data and performing actions which can be granted **per**

individual basis to any user; enabling an organization to control **who has access to which portion** of the system and **do what**.

- All communication between users, apps and ONEplatform is **encrypted** by industry-standard **SSL**.

How does the RedRose System work Offline?

- Both **ONEapp** and **RR Collect** are designed to **work totally offline** and once they are setup; there is no limitation for the usage in offline mode. The data stored within them is **very small** and standard consumer Android Device storage spaces are very large which allows them to **be offline as long as required** (even months).
- **Data synchronization** lets devices **send** the collected data (transactions, surveys etc.) and **receive** changes in the ONEplatform (top-ups, survey definitions, market related data etc.)
- There are **two ways to synchronize** data between devices and platform;
    - **Direct Sync to Cloud**: On this scenario the device connects directly to ONEplatform by 2G, 3G, LTE by a SIM card within the device or through a Wi-Fi access point or a modem etc.
    - **Peer-to-Peer Sync**: This scenario assumes there is no way of connection to ONEplatform where the device to sync resides, so direct sync. Is not possible. In this situation any Android device installed with the RedRose ONEapp (i.e one of the field staff devices) can act as a server and can synchronize the data from vendor devices in the peer-to-peer (p2p) mode without the need of internet connection. That field device can collect/push information from/to any number of vendor devices and once the field staff return to the office all the data can be synced from that field device. This enables fully offline operation in a very remote context.