

**PEACE TRACK MOBILE APPLICATION**

Product Requirements Document

# DOCUMENT CHANGE CONTROL

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| --- | --- | --- | --- |
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# DEFINITION

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| --- | --- |
| **Term** | **Definition** |
| Activity | Something a Volunteer does with a Specific Reporting Cohort, or group of individuals. |
| APCD | Associate Peace Corps Director (Interchangeable with PM) |
| CSPP | Cross Sector Programming Priority |
| Indicator | Measurement of something specific related to a set Reporting Cohort, or group of individuals. |
| M&E | Monitoring and Evaluation |
| Measurement | Evaluating a Reporting Cohort by measuring them against an Outcome Indicator. |
| Outcome | Longer term measurement of a specific Indicator for a Reporting Cohort, or group of individuals. |
| Output | Specific measurable Indicator directly connected to an Activity |
| PCMO | Peace Corps Medical Officer |
| PCV | Peace Corps Volunteer |
| PDI | Post-Developed Indicator |
| PM | Program Manager (Interchangeable with APCD) |
| Post | A Country with a Peace Corps Mission |
| Reporting Cohort | Specified group of people that a Volunteer conducts Activities with, or does a Measurement of. |
| RPCV | Returned Peace Corps Volunteer |
| SI | Standard Sector Indicator |
| VRF | Volunteer Report Form |
| VRT | Volunteer Reporting Tool |

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# GITHUB ORGANIZATION:

The PeaceTrack App will have an iOS and Android implementation. To support discussion on topics covering both environments there is a ReadMe repo as well. The ReadMe repo is purely for discussion on features common across platforms, it will not host code. It contains many reference materials that will be helpful for building this application.

**README**: <https://github.com/PeaceCorps/peacetrack-readme>

**iOS**: <https://github.com/PeaceCorps/peacetrack-ios>

**Android**: <https://github.com/PeaceCorps/peacetrack-android>

**Web Backend Support:** <https://github.com/PeaceCorps/app-web-server>

# BACKGROUND

## Objective of this Project

The objective of this project is to understand the Monitoring and Evaluation (M&E) process Peace Corps currently uses to assess the impact of Peace Corps Volunteers in the field, understand the data structure and reporting workflow changes the Agency would like to make in the future, and create a mobile solution that best represents that future desired state. This mobile application will serve as a change agent within the Agency. This application is a tangible product that represents our goal and our future, and will prepare us to go live with a better M&E tool.

This project should not just be seen as an internal change agent, but as the cornerstone tool of the future of Peace Corps Volunteer reporting on the work that they do. This effort will cause more Volunteers to report on their work, and allow Peace Corps to make data-driven decisions in all aspects of our business.

We appreciate the work of those who are helping advance this project at all levels. We are grateful for your help.

## Why Reporting Matters

Peace Corps is held accountable for the work Volunteers conduct in the field. This work is reported by Volunteers through the Volunteer Report Form (VRF), which is created and captured through a web portal called the Volunteer Reporting Tool (VRT).

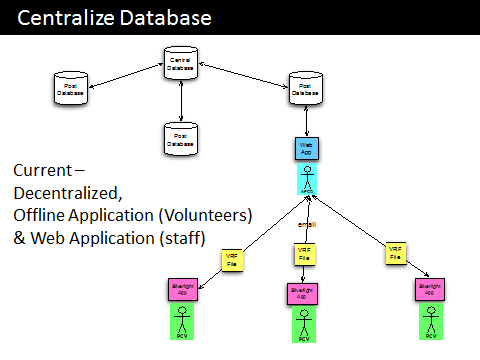
Data collection is vital to:

* Gauge the effectiveness of Volunteers and the programs they support.
* Determine the effectiveness of funds provided by other governmental agencies.
* Engender a sense of accomplishment among the Volunteers, who can look back at data collected after their service as evidence of their work.

# Current Reporting Workflow and Data Structure

## Current Workflow

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) “VRT 4.0\_Proposal\_2014.03.24.pptx” in Resources on GitHub.



The current process involves the Volunteer downloading a Silverlight application on a desktop computer to view and complete a Volunteer Report Form (VRF). The VRF is then emailed to the Associate Peace Corps Director (APCD). The APCD uploads the VRFs to the Post (Country) database, and then reviews the VRF to clean any applicable data and provide feedback to Volunteers on their reported work. That database then syncs with a central database.

**Current Steps:**

* APCD/PM needs to generate VRFs for each Volunteer in the web app
* APCD/PM then sends these VRFs to Volunteers.
* Volunteers must download Silverlight app onto a computer to open and access VRFs.
* Volunteers can use Silverlight on a personal computer and update the VRF offline between reporting periods.
* After completing their VRFs Volunteers must attach VRF to email and send to APCD.
* APCD then must place VRFs in proper folder and import into the VRT.

This current process is prone to errors and bugs due to how many steps are involved. The VRF is available offline, but only accessible on Windows and Mac; not accessible on iOS, Android, Windows Phone, or Linux.

Peace Corps Volunteers (PCVs) currently have the option of using a 22-page long pen and paper-based "Activity and Outcome Tracking booklet" to keep track of their day-to-day activities in the field.

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) “Activity Tracking Booklet\_2014\_3\_10.docx” in Resources on GitHub.

The paper booklet is difficult to use for its size, susceptibility to damage, and limited utility compared to an electronic means of capturing this information. The result is that activities are not recorded in detail and leave Volunteers to reconstruct data from memory (and thus creating inaccurate records).

Data is reported semi-annually (between two and four times per year), and frequently requires Volunteers to travel to a nearby city to complete their data entry. Volunteers can use the paper booklet to help complete Volunteer Reporting Form (VRF), using the online called the Volunteer Reporting Tool (VRT). Data entry for the entire quarter can take many hours to complete.

## Current Reporting Structure

Peace Corps Volunteers (PCVs) are asked to report on the activities they are undertaking with their communities. **Activities are measured by Indicators**. Indicators are the ground-level data points that measure Volunteers’ work.

Project Goals

Project goal statements articulate intermediate or longer-term Outcomes that need to occur to achieve the project’s purpose. Volunteers work on several Goals under their overarching Project during their service.

**e.g.** Community members will adopt behaviors to mitigate the harmful effects of HIV

**e.g.** Teachers will improve their English language proficiency and implement student-centered teaching techniques [Thailand, Education, Goal #1]

Project Objectives

Project Objectives articulate the most significant, attributable Outcome or Outcomes that will result from Volunteer and partner activities, and will contribute to achievement of project goals. Each Project Goal will have several Objectives.

**e.g**. By XXXX, # males will have been circumcised and received post circumcision care.

**e*.g.***Improve Teachers’ Communication Skills:By the end of 2018, 330 teachers will demonstrate improved proficiency in English. [Thailand, Education, Objective 1.1]

Activity Statement

Activity statements detail what Activities will take place for each Objective. Activity Statements answer the following questions:

1. How many Volunteers will conduct work corresponding to each Objective,
2. Which set of activities they will undertake to achieve each project Objective,
3. Major Outputs of the activities (often number of people trained).

**e.g.** Each year, (#) of volunteers will increase awareness of HIV prevention through male circumcision by mobilizing X# of men to get circumcised through conducting a baseline and at least one of the following:

**e.g.** trainings; workshops; referral services; health promotion campaigns; promotion to women's groups; other activities related to male circumcision.

**e.g.** Each year 55 Volunteers will work with 82 teachers, will use more English through daily conversations, co-planning and co-teaching. They will also encourage English teachers to use a higher proportion of English in the classroom. [Thailand, Education, Activity Statement for Objective 1.1]

Activity

An activity is the actual day-to-day, on the ground work of the Volunteer in their community. An Activity can be repeated with the same, or a different group of people.

* Linear Activity: Same activity, same group, over a period of time
* Evolution Activity: Different activity, same group, over period of time
* Franchise Activity: Same activity, different groups, over period of time
* Solitary Activity: Different activity, different group, single instance in time



Indicators

Indicators are statistics or metrics used to gauge project performance. There are two distinct ways indicators are differentiated: Output vs. Outcome and Standard Sector Indicator vs. Post-Defined Indicator. An Indicator is either an Output or an Outcome, and in either case, falls under a bucket of Standard Sector Indicator or Post-Defined Indicator.

|  |  |
| --- | --- |
| **Output (SI)** | **Outcome (SI)** |
| **Output (PDI)** | **Outcome (PDI)** |

1. Outputs- The direct result of project activities. Outputs relate to direct products or deliverables of project activities such as number of peer education sessions completed, number of people reached, and number of materials produced. Outputs frequently measure the number of individuals impacted, but can measure other things such as materials produced.

**e.g.** Number of individuals reached with a message promoting male circumcision as a way to reduce the risk of HIV infection since the last reporting period

**e.g.** Number of trees planted

**e.g.** Number of teachers who interacted with a Volunteer in English [Thailand, Education, PDI Output Indicator]

1. Outcomes- Effect of project activities on target audience, such as change in knowledge, beliefs, skills, behaviors, and access to services. Projects typically have multiple, sequential Outcomes: “short term Outcomes” are any changes or benefits associated with changes in knowledge, skills, or attitudes; “intermediate Outcomes,” are any changes in behaviors building upon the short-term Outcomes; and “longer term Outcomes,” or impacts, are longer range and cumulative effect of a project over time such as change in HIV infection, morbidity and mortality; impacts are rarely attributable to a single project. Note that these sequential levels of Outcomes for capacity-building activities often match Kirkpatrick training evaluation levels. As with Outputs, Outcomes can measure things other can impacts on a targeted group of individuals, changes in the environment also are measured by Outcomes.

**e.g.** Number of males circumcised who returned at least once within 14 days of surgery for postoperative follow‐up care or after 7 days for non-surgical circumcision (intermediate-term Outcome)

**e.g.**  Reduction of erosion (loss of soil)

**e.g.** ED-003-A Teachers: English Teacher Proficiency – Number of Teachers, out of the total number of teachers the Volunteer worked with, who conducted a higher proportion of their class procedural language in English [Thailand, Education, SI Outcome Indicator]

1. Standard Sector Indicator (SI)are determined by sector, and remain static across all countries. They allow for standardization in reporting, particularly when reporting is required for external donors or partner organizations If an activity is connected to a Cross-Sector Programming Priority*, i.e. HIV/AIDS for PEPFA; food security for Feed the Future; and Malaria for STOMP Out Malaria*, those indicator metrics are passed along to the corresponding partner organization. Each Post (Country) can include any Standard Sector Indicator in their reporting requirements for each Project and Objective, but are not required to us all SI (An Objective might have five possible indicators, but the post only decides to include two). Posts use a combination of indicators from a standard suite that Peace Corps HQ created (SI), and indicators they created themselves (PDI – see below). There are no set rules about how many of each kind they use in a given Objective.
   * Standard Sector Indicators are identified using a code. The first set of letters represents the sector, the middle number refers to the particular indicator, and the last letter indicates the particular Objective.
     + **e.g.** ED-003-A (ED is for Education; 003 is the indicator number; A is the Objective).
2. Post-Defined Indicators are unique for each sector in each country, measuring the Outcomes and Objectives the Post has determined to be necessary.

There are identifiable categories of indicators. A large majority of indicators focus on numbers of people. People can be more narrowly defined – students, teachers, farmers, particular age groups, pregnant women, etc., and are often times measure attendance at an event, but might also be the number completing a predefined activity. Other possible indicator types include: Organizations/Groups/Schools; materials created (lessons, business plans, and campaign materials); systems or practices developed, spread, or improved. Certain sectors may have other specific indicators that do not fall in these categories, but those are very limited in number.

### Disaggregation within Indicators

Many Indicators include some level of disaggregation – that is the main question for the indicator is broken up into sub-questions. The most common form of disaggregation is by demographic bucket.

* **e.g.**  Indicator: # people trained in growing fruit trees
* Disaggregation: Males 0-10, Males 11-24, Males 25+, Females 0-10, Females 11-24, Females 25+

#### Semantic Meaning of Disaggregation buckets

Each indicator may have its own disaggregation bucket that may not line up with others. For instance indicator (A) may ask for males 0-4 and 5-9 while indicator (B) asks for males 20-25. Even though those buckets are not the same, a program manager may want to know, “How many males did a volunteer work with?” Therefore the system needs to know that all three buckets correspond with “Males”. Similarly the age range of a disaggregation bucket should have semantic meaning to allow a program manager to pull “everything we did with kids between 0-9” even if one indicator uses the 0-4 bucket and another uses a 0-9 bucket. The system understands that one is a subset of the other.

#### Multiple Axis of Disaggregation

A given indicator may have multiple axis of disaggregation – multiple sets of disaggregations that each sum to the total.

* **e.g.** Indicator: # individuals trained in X
* Disaggregation 1: Males, Females
* Disaggregation 2: Community Members, Service providers.

For two simple disaggregations such as this it is simple enough to just create a 2x2 matrix and treat it as one disaggregation: Male Community Members, Male Service Providers, Female Community Members, Female Service Providers.

However some indicators have multiple axis of disaggregation that are each large (3-6 buckets) such that a matrix approach is infeasible or confusing. In such cases it is desirable to have two independent axis of disaggregation and a mechanism for ensuring that the user is not able to input differing sums in each.

Multiple Axis Disaggregation is especially prevalent for Outcome indicators, where there is both a numerator and denominator for each disaggregation to measure the achievement rate of each sub-population.

* **e.g.** Number of Males ages 0-5
* Disaggregation 1: Number of Males ages 0-5 who achieved results
* Disaggregation 2: Total number of Males ages 0-5 regardless of results

#### Additional Questions

Along with strict disaggregations, many indicators include follow up questions. These can be of the form of fill in the blank, short paragraph, multi-select, single select, etc.

**Current Reporting Diagram:**

Time

Outcome Measurement for specific Reporting Cohort

= Measurement

= Activity 1

= Activity 2

Currently, measurements on Outcomes are taking at the same time an Activity takes place. This means that Outputs and Outcomes are being collected at the same time. **This is changing in the proposed data structure and workflow.** (Read below)

# Desired Workflow and Data Structure

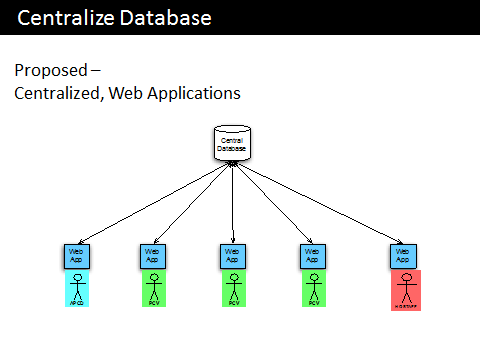
## Desired Workflow

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) “VRT 4.0\_Proposal\_2014.03.24.pptx” in Resources on GitHub.

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) PDF titled “Project Data Framework” for diagram of how the reporting structure is captured.

Peace Corps would like to reduce the steps to submitting Volunteer activity information and indicators. The agency would like to see a flatter reporting structure that allows for direct input by the end user, revision history on the database, and direct access by the staff and Volunteers to the information.

In the proposed diagram below, the proposed reporting structure is flatter and more direct. The diagram depicts the new tool as a mobile-friendly web application. **Peace Corps is open to other mobile solutions, including platform-specific applications like the one being requested in this requirements document.** The diagram should be interpreted as a representation of the organization’s data structure desires, and is less about the tools to get there. In many cases, it’s important that the Volunteer is able to record and save information about their work offline, and then upload that information later, which is the primary reason we’re calling for a dedicated app.



**Introducing a mobile application into the process could:**

* Reduce the number of steps in the data submission process.
* Ensure Volunteers record accurate data in a timely fashion since they are less likely to forget their phone or tablet compared to a large paper packet.
* Increase timeliness of information captured.
* Provide data more directly, with less intermediary tools.
* Allow the Volunteer to record their work electronically, even in an offline environment.

## Desired Application Data Structure

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) PDF titled “Project Data Framework – 2015 Proposed” for diagram of how the reporting structure is captured.

Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Reference%20Material) the excel file “Project Framework Indicator List” for the full list of indicators and how they are structured.

These documents contain detailed information about the indicators used by each Country, for each of their sectors. Indicators are identified by Post (country), Sector, Indicator Type (Output/Outcome; PDI/SI), and the indicator definition. The Project Frameworks provide an overview of the reporting structure, while the Indicator List should provide a sortable resource of individual indicators.

**The end user is in control of 3 sections of Data:**

* Activity Entry
* Measurement Entry
* Reporting Cohort Management

The end user needs to be able to add Activity data to the application in the easiest way possible. **The ease of data entry is the most important part of the user experience.** If a volunteer organizes an activity, they need to be able to quickly record it, and have the application do the leg work on figuring out how that connects to upstream Objectives and downstream Indicators.

If an Objective is selected, at least one Output indicator connected to that Objective must be added to measure the impact. Additional Output indicators not related to the specific Objective(s) connected to that activity can also be included. For example, if a soccer game is organized so that the Volunteer can talk about HIV/AIDS at halftime, the primary Objective and measured Output would relate to providing knowledge about HIV/AIDS, while a side Output may relate to physical fitness and the importance of exercise.

As mentioned, the list of indicators and what they relate to can change over time. It’s important that the data structure allows for this flexibility. Peace Corps may add or remove Objectives, and modify the related Output and Outcome measurements.

**The biggest difference between the current data structure, and the future proposed one that is being implemented in the PeaceTrack application is in regards to how Outcomes are measured.**

In the new data structure, Outcomes will NOT be linked to a specific activity. Outcomes have longer time scales, and are intended to measure the true progress of a Reporting Cohort over time. An Outcome attempts to understand a community’s full understanding of HIV/AIDS, for instance, rather than just measuring their comprehension immediately after an Activity on that topic. **Outcome indicators come from taking Measurements, not from conducting Activities.**



This means that for both Activities, and Measurements, two things will always be recorded: When the Activity/Measurement took place (time), and who the Activity/Measurement was with (Reporting Cohort). Having these two things allows us to produce better Monitoring and Evaluation metrics.

**The below diagram explains how Activities and Measurements should look over time:**

Time

Outcome Measurement for specific Reporting Cohort

= Measurement

= Activity 1

= Activity 2

Note in the diagram that measurements of Outcomes takes place separate of Activities. This is the primary difference compared to the business process currently in place. This diagram represents what M&E will be moving to.

# FUNCTIONAL REQUIREMENTS:

## Set Up

* The application should prompt the user for their name, contact information, country, and sector to set up the application.
* Based on country and sector inputs, the application should download a portion of the project framework database, including indicators, to allow for offline data entry with the minimal amount of bandwidth used.

## Activity Data Entry

* User needs to record their activity and add data quickly. **This is the most important priority.**
* Activities need to be set up to correspond to the 4 types of Activities a Volunteer can conduct (Linear, Evolution, Franchise, Solitary).
  + Resource: [See](https://github.com/PeaceCorps/peacetrack-readme/tree/master/Volunteer%20Reporting%20Tool%20-%20Data%20Structure) “4 Types of Activities Diagram” on GitHub.
* If an Activity is notes as being a reoccurring Activity, the application should make data entry on subsequent instances of that activity even easier than the initial set up.
* Repeat instances of a reoccurring activity should offer a reminder system to the Volunteer to complete their data entry. If a Youth Group meets every Monday, the application can prompt the user for their Activity data entry each Monday, for instance.
* Based on initial application set up, the user should provide basic information to the application that makes data entry easier, including Country and Sector. If a user enters the sector (Health, Education, …) the corresponding indicators will be filtered to ones that apply to that work.
* Activities should easily connect to upstream Objectives.
* Activities should easily connect to downstream Indicators (Standard Sector Indicators comprised of Outputs and Outcomes, as well as Post-developed Indicators).
* For reoccurring Activities that have long time scales and continual Peace Corps involvement, the user need to be able to indicate the Activity will be continued by another user after they leave. A long term project with multiple Volunteers should attempt to keep a consistent record without a break.
* Measurement Data Entry
* Users should be able to add Measurements to the application easily. Measurements use Outcome Indicators to measure the progress as it applies to a given Reporting Cohort in time.
* Users should not have to know what upstream Objectives the Outcome they are measuring relate to. The mapping to Outcomes to Objectives should be done on the backend.

## Reporting Cohort Management

* A Reporting Cohort is a fixed list of individuals that a Volunteer interacts with.
* Users should be able to create and manage multiple Reporting Cohorts. Ex: Youth Group, After School Study Group, Soccer Team.

## Data Sync

* Data needs to be entered offline and stored locally on the device.
* The application should support updates to both the raw data on indicators from a web server, as well as changes to the data structure as applicable.
* The application data structure needs to be flexible enough so that when Peace Corps or affiliated organizations add/remove/change indicators, the application can adapt and treat legacy data in a non-destructive manner.
* The application must be able to export the data collected in machine-readable and standard formats, including CSV.
* Data should be exportable both by Project and by Indicator. Users will be asked at the end of the day how many people were trained on X that were between the ages of Z and Y. Providing that data easily is important.

# DOWN THE ROAD IDEAS:

* Direct sync and download ability to the main VRT database, without intermediary CSV export and import.
* Ability for Volunteers to see the aggregated effort of multiple Volunteers to achieve their Project’s Objectives.
* Ability for Volunteers to report shared activities when they collaborate with other Volunteers. Currently, the VRF lets Volunteers record the activities they may do with other Volunteers, but only one person gets to report the ‘results’ – this way there isn’t double-counting. Volunteers, however, have to rely on their notes to remember what results were achieved (i.e., it’s not recorded in their VRF file for reference later, post-Peace Corps). Volunteers should get credit for the work they accomplish in tandem with other Volunteers and be able to review that record, even if they were not the point person.
* Ability for Volunteers to see activities from Volunteers working in their community before them and, possibly, continue reporting on results achieved by the same participants