

---

# **Elmo Documentation**

***Version 7.0***

**The Carter Center**

**janv. 31, 2018**



<b>1</b>	<b>1. Introduction</b>	<b>1</b>
1.1	1.1. ELMO . . . . .	1
1.2	1.2. Besoins système . . . . .	1
1.3	1.3. Vue globale sur l'entête . . . . .	1
1.4	1.4. Viewing the Footer . . . . .	2
1.5	1.5. Viewing the Dashboard . . . . .	3
<b>2</b>	<b>2. Setting up a Mission</b>	<b>5</b>
2.1	2.1. Create a Mission (Admin only) . . . . .	5
2.2	2.2. User Permission Levels . . . . .	6
2.3	2.3. Create Users . . . . .	6
2.4	2.4. Create multiple users (ideal for adding a large number of users) . . . . .	8
2.5	2.5. Manage existing users . . . . .	8
2.6	2.6. Export VCard . . . . .	8
2.7	2.7. User Groups . . . . .	9
<b>3</b>	<b>3. Settings</b>	<b>11</b>
3.1	3.1. Time Zone . . . . .	12
3.2	3.2. Preferred Languages . . . . .	12
3.3	3.3. Override Code . . . . .	13
3.4	3.4. Shared SMS settings . . . . .	13
<b>4</b>	<b>4. Forms : Overall</b>	<b>15</b>
4.1	4.1. Overall structure of Forms . . . . .	15
4.2	4.2. Forms menu . . . . .	17
4.3	4.3. Importing Standard Forms . . . . .	18
4.4	4.4. Creating a General Form . . . . .	18
4.5	4.5. Creating Groups and Grids . . . . .	19
4.6	4.6. Creating a Standard Form . . . . .	21
4.7	4.7. Publishing a Form . . . . .	22
4.8	4.8. Printing Forms . . . . .	23
<b>5</b>	<b>5. Forms : Questions</b>	<b>25</b>
5.1	5.1. Create a Question . . . . .	25
5.2	5.2. Types of questions . . . . .	27
5.3	5.3. Creating Hints . . . . .	27
5.4	5.4. Language translations . . . . .	27

5.5	5.5. Tags . . . . .	29
<b>6</b>	<b>6. Forms : Option Sets</b>	<b>31</b>
6.1	6.1. Create New Option Set . . . . .	31
6.2	6.2. Edit existing Option Set . . . . .	34
6.3	6.3. Import Standard Option Set . . . . .	35
6.4	6.4. Importing large option sets . . . . .	35
6.5	6.5. Upload a Large Geographic Option Set . . . . .	35
6.6	6.6. Language translations . . . . .	36
<b>7</b>	<b>7. Submitting data : Online</b>	<b>39</b>
<b>8</b>	<b>8. Submitting data : Tablet</b>	<b>41</b>
8.1	8.1. Setup of Android tablet/phone . . . . .	41
8.2	8.2. Downloading forms . . . . .	43
8.3	8.3. Submitting forms . . . . .	43
8.4	8.4. Editing forms before submission . . . . .	43
8.5	8.5. Override Code . . . . .	44
<b>9</b>	<b>9. Submitting data : SMS</b>	<b>47</b>
9.1	9.1. SMS Form Creation . . . . .	47
9.2	9.2. SMS Authentication . . . . .	49
9.3	9.3. Submitting SMS responses . . . . .	50
<b>10</b>	<b>10. Search</b>	<b>53</b>
10.1	10.1. Operators . . . . .	53
10.2	10.2. Qualifiers . . . . .	53
<b>11</b>	<b>11. Reports and Data Analysis</b>	<b>55</b>
11.1	11.1. Internal report building . . . . .	55
11.2	11.2. Exporting to Spreadsheets (.csv) . . . . .	58
11.3	11.3. External connections - Tableau . . . . .	59
<b>12</b>	<b>12. fonctionnalités et informations supplémentaires</b>	<b>61</b>
12.1	12.1. messages de diffusion . . . . .	61
12.2	12.2. Converting and Displaying GPS Coordinates in ARcGIS 10 . . . . .	62
12.3	12.3. Device Security . . . . .	67
<b>13</b>	<b>13. Information for Administrators</b>	<b>71</b>
13.1	13.1. FrontlineSMS gateway setup . . . . .	71
<b>14</b>	<b>14. About ELMO licenses</b>	<b>75</b>

# CHAPITRE 1

## 1. Introduction

### 1.1 1.1. ELMO

ELMO est le système de collecte de données et de reporting de ELection MOonitoring open-source du Centre Carter, spécialement conçu pour le suivi des élections. Equipé d'ELMO, les observateurs peuvent soumettre des évaluations d'un processus - via des tablettes (en utilisant Open Data Kit), SMS, ou directement en ligne - en temps réel au siège de la mission ou de la mission \*. Le système de rapports d'ELMO organise les résultats des observateurs et est utilisé par les missions du Centre Carter dans le monde entier pour analyser les données et évaluer les élections ainsi que les processus politiques plus larges.

La licence open source pour ELMO est Apache 2.0. ELMO peut être hébergé sur des serveurs personnels et les utilisateurs peuvent contrôler qui a accès aux données.

### 1.2 1.2. Besoins système

Installation de l'environnement de développement ELMO

<https://github.com/thecartercenter/elmo/blob/master/docs/development-setup.md>

### 1.3 1.3. Vue globale sur l'entête

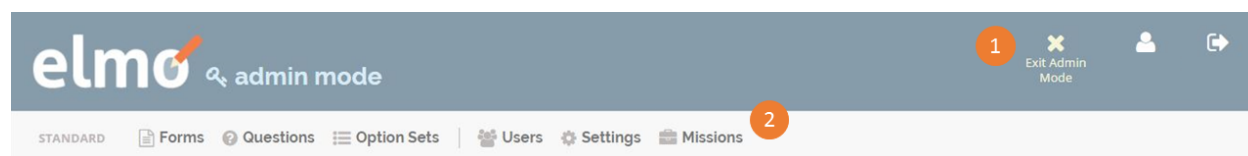


L'entête est la partie supérieure de l'écran. Voici ces composants

1. L'icone **Home**. Cliquez ici pour revenir à la page d'accueil du projet ou *mission* sélectionné.

2. La boîte de sélection de la mission. Cliquez ici pour afficher toutes les missions auxquelles l'utilisateur peut accéder. Cliquez sur une mission pour accéder à sa page d'accueil, ou cliquez à nouveau sur la case pour masquer la liste.
3. L'icône **\*\* Mode Admin \*\*** (Administrateurs uniquement). Cliquez ici pour entrer dans le mode Admin. L'entête de ce mode est différent, mais la fonction de chaque icône est la même. Il n'y a que deux nouvelles icônes, dont les fonctions seront discutées plus tard.
4. L'icône du profil d'édition. L'icône affiche votre nom d'utilisateur et votre rôle. Cliquez ici pour éditer votre profil.
5. L'icône **Déconnexion**. Cliquez ici pour vous déconnecter d'ELMO
6. The **Submit** menu. Click this to display a list of all published forms within the current mission. Click a form to fill it out and submit it, or click the menu again to hide the list.
7. The **Responses** menu. Click this to go to the Responses page, which shows all responses that have been submitted to all forms within the mission.
8. The **Reports** menu. Click this to go to the Reports page, where you can generate reports and see all of the reports that have already been generated within the mission.
9. The **Forms** menu. Click this to go to the Forms page, where you can create and import forms and see all of the forms that have already been created in or imported to the mission.
10. The **Questions** menu. Click this to go to the Questions page, where you can create and import questions and see all of the questions that have already been created in or imported to the mission.
11. The **Option Sets** menu. Click this to go to the Option Sets page, where you can create or import option sets and see all of the reports that have already been created in or imported to the mission.
12. The **Users** menu. Click this to go to the Users page, where you can :
  - (a) Create new users.
  - (b) See information on all users that have already been created.
  - (c) Export user information as a vCard.
  - (d) Send a broadcast to one or more users.
13. The **Broadcasts** menu. Click this to go to the Broadcasts page, where you can send a broadcast to users and view broadcasts that have already been sent.
14. The **SMS** menu. Click this to view all SMSes that have been sent and received by ELMO.
15. The **Settings** menu. Click this to view and change your personal settings.

This is the version that Admins will see in Admin Mode :

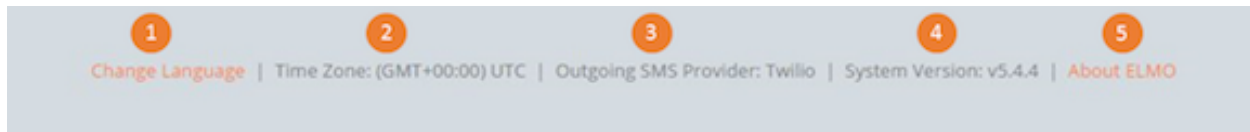


There are only two new components :

1. The **Exit Admin Mode** icon. Click this to exit admin mode.
2. The **Missions** menu. Click this to go to the Missions page, where you can create a new mission and see all missions that have already been created.

## 1.4 1.4. Viewing the Footer

The footer is the bottom section of the screen. Here are its components :



1. The Language menu. Click **Change Language** to reveal a list of all languages available. Click a different language to access that language's online version of ELMO, or click the current language to close the list. **Change Language** will not return, but you can click on the current language to reveal the list again.
2. The time zone the user has selected. This can be changed in the Settings menu.
3. The outgoing SMS provider for the current mission (not shown in Admin mode).
4. The current version number of ELMO being used.
5. The About ELMO icon. Click this to go to getelmo.org.

**Note :** ELMO online languages are slowly being built and increasing through volunteer efforts. Although the languages available of these are limited, ELMO is multilingual ready (ISO 639-2 standard) for questions and forms. The list of available languages is [here](#).

## 1.5 1.5. Viewing the Dashboard

**elmo elmo 101**

ELMO 101 Admin Mode dodie (Admin)

Submit Responses Reports Forms Questions Option Sets Users Broadcasts SMSes Settings

**LATEST RESPONSES**

Form	User/Team	Program	Submission Time
Consumption at work	Tara Shariff	Development	Dec 09 2015 20:00
Feedback	Participant 22		Oct 14 2015 17:58
Feedback	Participant 1		Oct 14 2015 17:57
Feedback	Participant 16		Oct 14 2015 17:56
Feedback	Participant 5		Oct 14 2015 17:56
Feedback	Participant 15		Oct 14 2015 17:55

**RESPONSE LOCATIONS**

**SUMMARY**

36 in the Past Year  
36 Total Responses  
35 Awaiting Review

**TOP FORMS**

23 Consumption at work  
13 Feedback

**LOW ACTIVITY**

0 Participant 2  
0 Participant 3  
0 Participant 9

**SUMMARY OF CONSUMPTION AT WORK**

Generated at Feb 10 2016 18:35

Mission: ELMO 101  
Form: Consumption at work  
Total Submissions: 23  
Non-reporting Observers: Participant 2, Participant 3, Participant 9, Participant 11, Participant 14, Participant 21

	Peace Programs	Health Programs	Operations/Finance
#2 In which program/office do you work?	52.2% (12)	21.7% (5)	26.1% (6)
	Average	Minimum	Maximum
#3 Approximately how many days per week do you eat breakfast?	3.7	0.0	5.0
	Coffee	Tea	Neither

Enter Full Screen

The first visible screen when logged into ELMO is the Dashboard. This feature gives an overview of data gathered from responses to forms. Visible on the Dashboard screen are :

1. Recent form responses
2. An overview of geographic data submitted with responses
3. An overview of all form submissions
4. All reports created in the mission

**Note :** The report with the most views will appear at the initial Dashboard screen





---

## 2. Setting up a Mission

---

Every instance of an ELMO database allows administrators to organize field projects into areas called *missions*. For example, if you have a project going on in two different countries, with different reporters or observers, you may want to have two different missions : Country 1 and Country 2.

### 2.1 2.1. Create a Mission (Admin only)

Only administrators are able to work in ELMO in Mission Mode or Admin Mode with an overall view of all missions ; everyone else must be assigned to a unique Mission. To create a mission, the Admin Mode must be activated. To activate Admin Mode, click the *Admin Mode* menu located in the top right corner of the screen. To create a mission :

1. Click the **Missions** menu located on the main menu bar at the top of the Admin Mode page
2. Once on the Missions page, click the orange **Create Mission** link
3. Enter a name for the mission : use only letters, numbers, and spaces
  - (a) Mission names usually include the country name and the year (i.e. Kenya 2013)
  - (b) Administrators have the option to lock a mission. When a mission is locked, Responses and Forms cannot be created or edited, and users cannot be added or deleted. To lock a mission, click the box labeled **“Locked ?”**
  - (c) Click the **Save** button to save changes
4. Click **Exit Admin Mode** to return to Mission Mode
5. To locate the recently created mission, select the title of the mission in the drop down menu found in the top right corner, right of the Admin Mode selection
6. To set the appropriate time zone and language(s) for the mission, click the **Settings** menu located on the main menu bar

**Note :** To edit the name of a mission or to lock/unlock a mission after it has been created, Admin Mode must be activated. Once activated, click the Pencil icon (edit option) located to the right of the mission to be edited.

## 2.2 2.2. User Permission Levels

ELMO has four kinds of user levels – observer, staffer, coordinator, and administrator. Each user level has a different set of permissions based on the functions they are expected to perform during ELMO missions.

Role	Responsibility	Privileges
Observer	Collects and submits data from the field	<ul style="list-style-type: none"> <li>Complete responses to published forms via tablet, via SMS, or via the ELMO online platform</li> <li>Edit own user information</li> <li>Generate reports (only from user's own submitted data)</li> </ul>
Staffer	Performs real-time analyses and communicates with staff deployed to the field	<i>Observer privileges plus</i> <ul style="list-style-type: none"> <li>Generate reports from data submitted by any and all users</li> <li>Broadcast SMS messages to other users</li> </ul>
Coordinator	Designs forms/checklists and reporting structures and manages users for a specific mission	<i>Staffer privileges plus</i> <ul style="list-style-type: none"> <li>Create option sets, questions, and forms for the mission</li> <li>Create, edit, and delete users within a mission</li> </ul>
Administrator	Designs standardized forms/checklists and manages processes across several missions	<i>Coordinator privileges plus</i> <ul style="list-style-type: none"> <li>Create new missions</li> <li>Create standard option sets, standard questions, and standard forms to be shared/imported across all missions</li> </ul>

## 2.3 2.3. Create Users

Create, delete, edit, and manage users on the Users page. Administrators can create general users in Admin Mode and assign them to specific missions, or they can create users for specific missions in Mission Mode. Coordinators can only create new users in Mission Mode.

To create new users :

1. Determine whether to work in Admin Mode or Mission Mode,
2. Navigate to the Users page by clicking the **Users menu** on the main menu
3. Click Create User (located in orange text below the search bar)

**New User**

List Users

★ Full Name:  ⓘ 1

★ Username:  ⓘ 2

Email:  3

Main Phone:  ⓘ 4

Alternate Phone:  ⓘ

Active: ☒ 5

★ Role:  ⓘ 6

Preferred Language:  ⓘ 8

Notes:  9

Password Creation: ☐ Send email instructions ⓘ 10  
☐ Show printable instructions

**Save**

4. On the **Create User** page, new user information can be entered, including :

- (a) The user's full name *required*
- (b) The login/username (click the suggest button to suggest a login name) *required*
- (c) The user's email
- (d) The user's phone number (must include country code)
- (e) Whether the user is "active"
- (f) The user's role : observer, staffer, coordinator, administrator *required*
- (g) The user's mission assignment(s) (Admin Mode only)
- (h) The user's preferred language(s)
- (i) Notes about the user
- (j) Preferences for password set-up for the user's account (i.e. : password instructions delivered via email or printed out)

5. Click **Save**.

## 2.4 2.4. Create multiple users (ideal for adding a large number of users)

1. Click Create Multiple Users
2. Upload a spreadsheet with information for the new users.
  - (a) Click “**Spreadsheet template**” to download an example spreadsheet with the correct formatting for uploading multiple users.
    - i. Outside of ELMO create a CSV or XLS file
    - ii. In the first row, include each of the following in its own column : Username | Full Name | Main Phone | Alternate Phone | Email | Notes

	A	B	C	D	E	F
1	Username	Full Name	Main Phone	Alternate Phone	Email	Notes
2						
3						
4						
5						
6						

3. Click Import.

## 2.5 2.5. Manage existing users

1. To edit existing user information :
  - (a) find the user in the list of users, and
  - (b) Click on the **Pencil icon** located on the same line as the name (the second icon from the right).
  - (c) Click **Save**.
2. To export users' information to a vCard, which is readable in Microsoft Outlook :
  - (a) Find each user whose vCard will be exported
  - (b) Check the box to the left of their name.
  - (c) Click on Export as vCard
3. To delete existing users :
  - (a) To delete a single user, click the **Trashcan icon** located to the right of the **Pencil icon**
  - (b) To delete multiple users, check the box to the left of their name and click **Delete Multiple Users**.
4. To send an email or SMS broadcast to users :
  - (a) Check the boxes next to each user to contact
  - (b) Click **Send Broadcast** (to the left of Export as vCard). This redirects to a page where you can define the medium, subject, and content of the broadcast.

## 2.6 2.6. Export VCard

To export users' information to a vCard, which is readable in Microsoft Outlook :

1. Find each user whose vCard will be exported
2. Check the box to the left of their name
3. Click on **Export as vCard**

## 2.7 2.7. User Groups

In ELMO versions 5.7 and up, users can be placed into groups. Placing users into groups makes it easier to search for users and send broadcasts to them. To create a group of users :

1. Add multiple users to a mission
2. Click the **Users** tab
3. Check the box next to each user to be placed into the group
4. Click **Add Users to Group**
5. Click **Create New User Group**
6. Type the name of the group and click **OK**
7. Click the name of the group

To add users to a preexisting group, follow the same steps as above, but skip numbers 5 and 6.

To view user groups, go to the **Users** tab and click **List User Groups**. In the list, you can click :

1. **List Members** : click this to view a list of all users in the group
2. **Pencil icon** : click this to change the name of the user group
3. **Trashcan icon** : click this to delete the user group



## CHAPITRE 3

---

### 3. Settings

---

Settings are where you can define language preferences and SMS information for each mission.

The screenshot shows the Elmo 'new mission' interface. At the top right, there is a 'New Mission' dropdown menu (1) and 'Admin Mode (Admin)' links. Below this is a navigation bar with various menu items, including 'Settings' (2). The 'Settings' page is divided into several sections: 'General Settings' (3) with fields for 'Time Zone' (4), 'Preferred Languages' (5), 'Override Code' (6), and 'Allow Unauthenticated Submissions?' (7); 'Shared SMS Settings' (8) with fields for 'Incoming Number(s)' (9), 'Incoming SMS Token' (10), and 'Default Outgoing Provider' (11); 'IntelliSMS Settings' (12) with a 'Username' field (13); 'FrontlineCloud Settings' (14) with a 'Change API Key' link (15); and 'Twilio Settings' (16) with fields for 'Outgoing Number' (17) and 'Account SID' (18). A 'Save' button (19) is located at the bottom right of the settings area.

1. Select the title of the mission in the drop down menu found in the top right corner, right of the Admin Mode selection
2. Select the **Settings** menu

### 3.1 3.1. Time Zone

3. Set the appropriate time zone

### 3.2 3.2. Preferred Languages

4. Set the language(s) for the mission. This allows questions and forms to be defined in multiple languages for each mission, but it does not change the entire web interface of ELMO (defined in “Viewing the Footer” section above).
  - (a) Enter the two-letter language code for the language (example : Arabic = ar ; Chinese = zh). A list of ELMO compatible language codes can be found at this website : [http://www.loc.gov/standards/iso639-2/php/code\\_list.php](http://www.loc.gov/standards/iso639-2/php/code_list.php)



- (b) If multiple codes exist, type them in the preferred order of use and separate them with a comma (example : ar, zh)

\* Preferred Languages:  

- (c) In this example, the mission's primary language will be Arabic ; Chinese will be used where Arabic is not available

### 3.3.3. Override Code

#### 5. Generate an Override Code

- Click on the **Generate** button to set an override code. This code should be given to observers if the ability to send incomplete responses is needed. Users are not allowed to submit incomplete responses without this code when using the ODK app. (See section for more detail)
- Click on the **Regenerate** button to create a new override code if desired.
- If generating a new code, please record the old code if there are previous live forms. The new code will only work for forms downloaded after the code is regenerated.

#### 6. Choose whether to allow unauthenticated submissions.

### 3.4.3.4. Shared SMS settings

Indepth information about SMS setup is available in the [section for Administrators](#).

#### 7. Shared SMS settings :

- Incoming Number(s) :
  - Enter the phone number(s) to which incoming SMSes for SMS forms should be sent. This field will be displayed, verbatim, on the SMS guide. Only needed if using SMS submissions
- Incoming SMS Token :
  - This token is included in the URL used by the incoming SMS provider to prevent the submission of unauthorized messages.
  - Click on **"How do I use this ?"** for further instructions.
  - Register the incoming SMS URL with your gateway provider
  - Copy the URL from the pop up screen
- Default Outgoing Provider :
  - The adapter used to send outgoing SMSes. Note that SMS replies may be sent out via a different adapter, depending on the adapter by which they arrived.
  - Our current provider choices are IntelliSMS and Twilio (refer to section for how to set this up)

#### 8. IntelliSMS Settings :

- Enter the username for the IntelliSMS account

#### 9. FrontlineCloud Settings :

- Click **Change API Key** and enter the API Key for the FrontlineCloud activity

#### 10. Twilio Settings :

- Enter the outgoing number
  - This is the phone number registered with Twilio. Outgoing SMS broadcasts won't work unless this number is owned by your Twilio account. This number must include the country code. Example : +25680344523

- (b) Enter the account SID :
  - i. This is the account SID for the Twilio account
  - ii. If needed, click **Change Auth Token** to change the auth token for the Twilio account.
- 11. Click **Save** to keep any settings.

---

### 4. Forms : Overall

---

#### 4.1 4.1. Overall structure of Forms

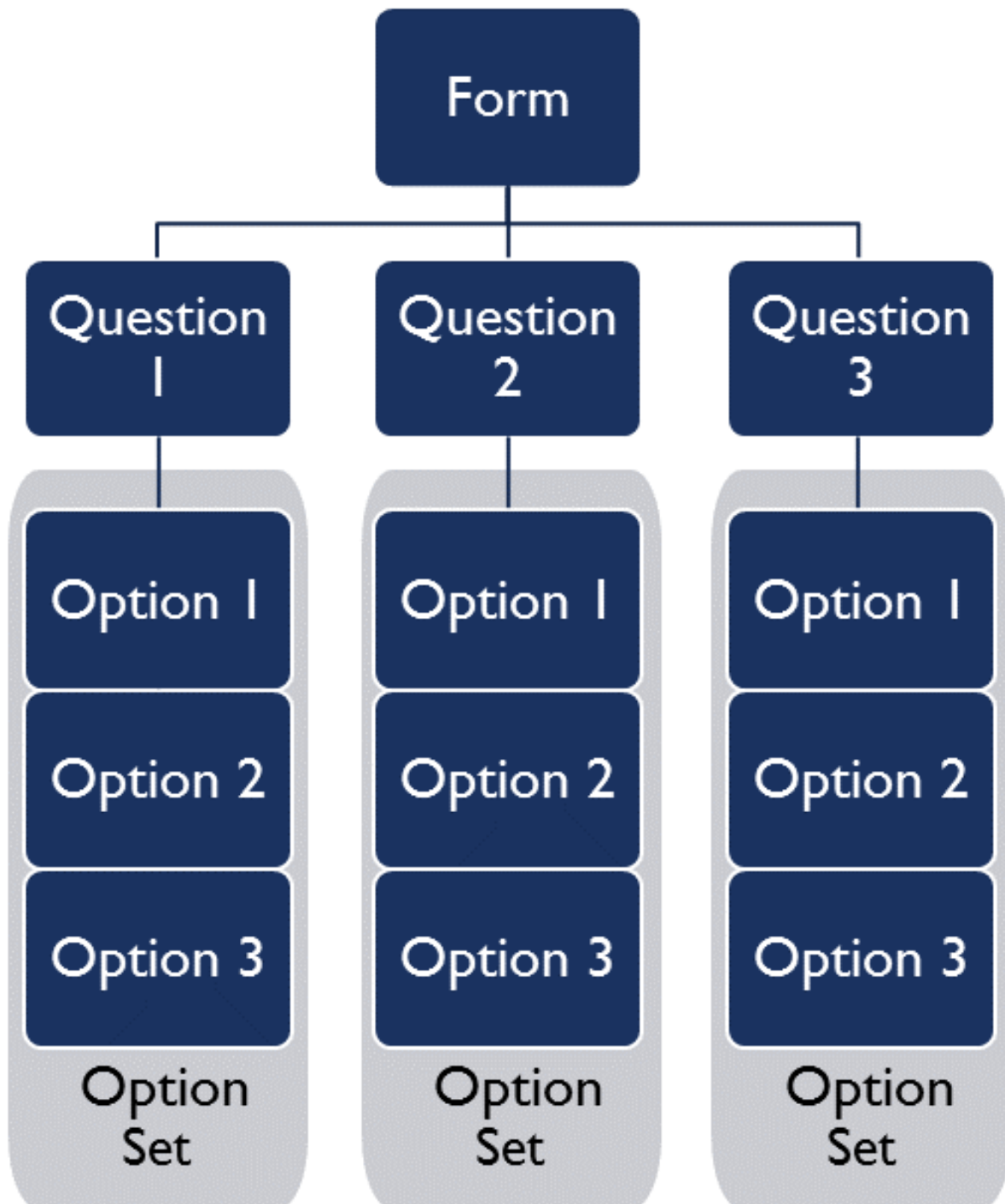
Forms, Questions, and Option Sets can all be standardized in ELMO. Standard Forms, Questions, and Option Sets eliminate the need for observation groups to remake checklists for every mission, and allows users to compare findings across missions. While election administration is largely similar from country to country, specific regulations can vary by country, and so should the design of the form, the questions in it, and the answers available. ELMO allows for customized design of forms for the mission at hand.

Standardization in ELMO Forms is a major aspect of The Carter Center's overall [Democratic Election Standards project](#). The project aims to build consensus on obligations for democratic elections and on detailed criteria for assessment by advancing the evolution of standards for democratic elections and increasing shared knowledge on election integrity, election observation, and democracy promotion. To do so, the project uses a [framework of obligations](#) derived from public international law, collaborates with the international elections community, and develops practical tools – like ELMO – for observers to assess elections. Standard Forms, Questions, and Option Sets not only allow for ease of mission development, but also are used by The Carter Center to increase coordination between the international elections community and human rights mechanisms, providing capacity-building on international obligations to civil society groups, build consensus on common indicators for election quality with the academic community, measure the impact of election observation, and maintain and develop shared knowledge on observation methodology.

Building a new form involves the following steps :

1. Creating a new form
2. Creating questions for the form
3. Depending on the question type, creating option sets for those question

In ELMO, these steps can be done in any order. In addition, forms, questions, and option sets can be reused both within a mission and across missions, depending on whether they are created in Mission Mode or Admin Mode. They can also be edited at any time.



## 4.2 4.2. Forms menu

The **Forms** menu lists all the available forms for a mission. These are the compo-

Displaying all 7 Forms. [Create New Form](#) [SMS Test Console](#) [Import Standard Forms](#)

Version	Name	Questions	Published?	Downloads	Responses	SMSable?	Allow Incomplete?	Last Modified
1	About Me	4	Yes	6	2	No	No	Mar 30 2016 19:16
	About Me 2	11	No	0	0	No	No	Mar 10 2016 17:40

see inset

nents :



1. **Create New Form** : click this to create a new form
2. **SMS Test Console** : click this to test form submission via SMS
3. **Import Standard Forms** : click this to import standard forms to the mission ; these forms can be edited within the mission

Once a form has been created, these components appear on the **Forms** menu

4. **Version** : this column shows the version numbers of the forms that have been published
5. **Name** : this column shows the name of each form
6. **Questions** : this column shows the number of questions in each form
7. **Published ?** : this column displays a **Yes** if a form has been published, and a **No** if it has not been published
8. **Downloads** : this column shows the number of times each form has been downloaded
9. **Responses** : this column shows the number of responses to each form that have been submitted
10. **SMSable ?** : this column displays a **Yes** if a form can be submitted via SMS, and a **No** if it cannot be submitted via SMS
11. **Allow Incomplete ?** : this column displays a **Yes** if a form allows incomplete submissions, and a **No** if it does not allow incomplete submissions

12. **Last Modified** : this column shows the date and the time that each form was last edited
13. The **Edit** icon : click this to edit the form in this row
14. The **Delete** icon : click this to delete the form in this row ; this can only be done for forms that are unpublished
15. The **Publish** icon : click this to publish the form in this row ; this can only be done for forms that are unpublished
16. The **Unpublish** icon : click this to unpublish the form in this row ; this can only be done for forms that are published
17. The **Clone** icon : click this to create an identical copy of the form in this row
18. The **Print** icon : click this to print the form in this row

In Admin Mode, the **Forms** menu only contains the following components :

1. **Create New Form**
2. **Name**
3. **Questions**
4. **Copies** : this column shows the number of missions each form has been imported to
5. **Copy Responses** : this column shows the number of responses to each form that have been submitted across all
6. **Last Modified**
7. The **Edit** icon
8. The **Delete** icon
9. The **Clone** icon
10. The **Print** icon

## 4.3 4.3. Importing Standard Forms

Forms used on different missions often contain similar or even identical questions. In ELMO's Admin Mode, administrator-level users can create standard forms, questions, and option sets that remain stored in the ELMO system and can be imported into any mission. The option to import standard forms eliminates the need to create new forms for every mission. Standard forms also allow for an easier comparison of data across missions. Mission staff should import the standard versions of option sets, questions, and forms that are not country specific and are used repeatedly, such as the question "How many ballots were spoiled ?" or the Option Set "Yes/No/N/A/Didn't observe."

To import a Standard Form :

1. Go to the **Forms** menu in the mission
2. Click **Import Standard Forms**
3. Choose Forms to import to the mission

**NOTE** : Remember to select Admin Mode to create standard forms. If the Admin Mode link does not appear on the screen, permission is not granted to create standard forms. ELMO Administrators can create and edit standard forms, standard questions, and standard option sets with the same actions used for general forms, questions, and option sets, but these actions must be performed in Admin Mode.

## 4.4 4.4. Creating a General Form

Forms are composed of *questions*. Some questions require users to select from a set of previously-defined responses (multiple choice, yes/no, etc.), while others require the user to enter text or numeric values. Building a new form involves the following steps : creating a new form ; creating questions for the form ; and depending on the user's needs, creating option sets for those questions. In ELMO, these steps can be done in any order.

1. To create a new Form :
  - (a) Go to the Forms page by clicking on the **Forms** menu on the main menu bar
  - (b) Click the **Create Form** link located under the Page title
    - i. Give the form a name.

That's all you have to do, but if you want to do more, click **More Settings** :

    - i. Check the **SMSable** box if you want to be able to receive responses to the form via SMS
    - ii. Check the **Allow Incomplete** box to allow forms to be submitted without required questions filled in.  
This is not typically desired, but an option if necessary
  - (c) Click **Save**
2. To add questions to the Form :
  - (a) Return to the Forms page
  - (b) Click the **Pencil icon** located on the same line as the desired form
  - (c) Click the **Add Questions** icon :
    - i. Select from existing questions in the question bank
    - ii. Create a new question to add to the Form (see *Questions* section below for detailed instructions)
  - (d) Click **Save** when finished editing

## 4.5 4.5. Creating Groups and Grids

A new feature in ELMO 5.x is the ability to create and sort groups of questions. Groups, in essence, keep questions together so that they appear on the same page. This feature serves several purposes, including :

1. Making it easier for administrators to create and sort questions within forms.
2. Making it easier for users to fill out forms by :
  - (a) placing multiple questions on one page, thereby reducing the number of times a person has to swipe, and
  - (b) creating “grids” with Select One questions (see below), to make it easier to answer related questions at once.

Here is an example of a few groups :

Note that questions do not have to be part of a group, nor does a group have to consist of multiple questions. A group can have one question or no questions, but this would make the group redundant.

Groups have some restrictions :

1. Groups cannot be placed within questions or other groups.
2. Groups cannot be made conditional or hold both **conditional questions** and the questions that trigger them.

To create a form with groups :

1. Create a form
2. Create or add questions to the form
3. Create at least one group
  - (a) Click **Add Group**
  - (b) Give the group a unique name
  - (c) Click **Save**
4. Click and drag the questions in the desired order of appearance, with the first question on top and the last one on the bottom
5. Repeat step 4 for the groups. Groups must be placed directly above the first question that is intended to appear within that group

## Questions

1. Name

1.1. [FName] What is your first name?

1.2. [LName] What is your last name?

1.3. [MName] Do you have a middle name?

2. [MNameFup] What is your middle name? #1.3

3. Color

3.1. [FavCol] What is your favorite color?

3.2. [NFavCol] What is your least favorite color?

3.3. [OFavCol] What other colors do you like?

3.4. [ONFavCol] What other colors do you dislike?

4. Sports

4.1. [Sports] What sport(s) do you play, if any?

5. Entertainment

5.1. [Movie] What is your favorite movie?

5.2. [TVShow] What is your favorite TV show?

## Edit Form: About Me

List Forms Create New Form View Form Delete Form Publish Form Print Form

Name: About Me

SMSable?:

Allow Incomplete?:

Published?: No

API Security Level: Private

Version: 1 (abn)

Save and Publish Save

## Questions

Add Questions Add Group

1. Name

1.1. [FName] What is your first name?

1.2. [LName] What is your last name?

1.3. [MName] Do you have a middle name?

2. [MNameFup] What is your middle name? #1.3

3. Color

3.1. [FavCol] What is your favorite color?



6. Drag questions intended for groups to the right so that they appear indented in relation to the group. If a question is intended to appear by itself, do not drag it right ; leave it where it is
7. Click **Save** to save the form, or click **Save and Publish** if the form is ready to be used

Groups can be used to create grids, an example of which is shown below.

The screenshot shows the ODK Collect application interface. At the top, there's a status bar with icons for Wi-Fi, battery, and time (10:23 AM). Below that, a header bar shows 'ODK Collect > Simple Grid' and icons for saving, navigating, and a menu. The main content area is titled 'Grades' and contains a grid of four questions, each with five radio button options labeled A, B, C, D, and F.

	A	B	C	D	F
What is your grade in English?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What is your grade in Social Studies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What is your grade in Math?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What is your grade in Science?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Grids can only be created under certain conditions :

1. Questions must be in the same group.
2. Questions must be “Select One” questions.
3. Questions must have the same option set.

To create a grid :

1. Create a form.
2. Create a group.
3. Place “Select One” questions with the same option set in the group.
4. Click **Save** to save the form, or click **Save and Publish** if the form is ready to be used.

## 4.6. Creating a Standard Form

The process of creating a Standard Form is similar to that of creating a General Form. To create a Standard Form :

1. Click **Admin Mode**
2. Click the **Forms** menu
3. Click **Create New Form**
4. Type a name for the form in the text box next to **Name**

elmo admin mode

STANDARD Forms Questions Option Sets Users Settings Missions

2

New Form Not Published

List Forms

\* Name: 4

More settings

5 Save

5. Click Save

6. Click **Add Questions** to add questions to the form

7. Click **Add Groups** to add groups to the form

elmo admin mode

STANDARD Forms Questions Option Sets Users Settings Missions

<div class="alert alert-success"><strong>Success</strong>: Form created successfully.</div>

Edit Form: stf Not Published

List Forms + Create New Form View Form Delete Form

\* Name: stf 4

More settings

8 Save

Questions 6 7

+ Add Questions Add Group

8. Click Save

## 4.7. Publishing a Form

Once a form has been created, it must be published before it can be accessed by observers, completed, and submitted. To publish a form :

1. Click the **Forms** menu in the main menu bar
2. Select the form in the list that appears on the page


3. On the right side of the page, click the upward-pointing arrow located on the same line as the form to publish

Version	Name	Questions	Published?	Downloads	Responses	SMSable?	Allow Incomplete?	Last Modified
1	About Me	10	Yes	6	0	No	No	Mar 10 2016 18:31
	About Me 2	11	No	0	0	No	No	Mar 10 2016 17:40
1	Group testing	2	Yes	2	1	Yes	No	Feb 22 2016 16:22
2	hint example	2	No	0	0	Yes	Yes	Mar 10 2016 16:20
1	Polling 1.0 alpha	101	Yes	3	2	No	No	Feb 18 2016 17:08
1	testing form	13	No	5	0	No	No	Mar 10 2016 17:40

## 4.8. Printing Forms

ELMO allows for forms and data to be printed. In the field, a hardcopy of forms, particularly the SMS Composition Guide, are required by observers in order to report. Note that you may have to turn on background printing in your browser.

To print :

1. In either Admin or Mission Mode, click the **Forms** menu
2. Click on the form to print
3. Click **Print Form** (shown below) 



---

## 5. Forms : Questions

---

To create and import questions to a mission, navigate to the Questions page by clicking on the **Questions** menu on the main menu bar.

**Note :** When creating a new question within the form, there are three options for questions available : conditional, hidden and required. Each of these options affects how the form is filled out by the user in the field. A question can be :

- *Conditional : whether or not it appears in the form is dependent upon how a previous question is answered*
- *Hidden : it is not shown on the form – only to be used if it cannot be deleted*
- *Required : it must be answered in order to submit the completed form, unless an override code is provided*

### 5.1 5.1. Create a Question

To create a question that will be used for the current mission :

- 1 : Click on the **Create Question** link (in orange text)
- 2 : Provide a unique name for the question in the box labeled **Code**. Normal users (in this case, users with the title of Observer) will not see this box
- 3 : Select the Type of response needed for the question from the following options :

## ? New Question

 [List Questions](#)


\* Code:  

\* Type:  

Title (English):  

Hint (English):  

Tags:

Is Key Question?: ☐ 

API Security Level:  



## 5.2 5.2. Types of questions

Text	Text designed with a shorter character limit, specifically used for SMS
Long Text	Text designed for paragraphs rather than simple phrases/sentences
Integer	This is a numeric answer that must be a whole number without decimals
Decimal	This is numeric answer that allows for decimals
Location	This question may be answered with a GPS coordinate derived from the user's device (e.g. tablet with GPS)
Select One	Only one answer may be selected from a multiple choice Option Set
Select Multiple	Multiple answers may be selected from a multiple choice Option Set
Date/Time	Enter both the date and the time
Date	Enter the date
Time	Enter the time
Image	Take a picture or choose a jpg or png image
Annotated Image	Take or choose a picture and annotate it
Signature	Sign with a finger
Sketch	Sketch an image with a finger
Audio	Record or choose a sound
Video	Record or choose a video

- 4 : After selecting the type of question (and option set if applicable), enter the main text of the question in the title box

A note on image, video, or audio submissions : those files can be big ! Big files may also mean a lot of data costs as well. Consult with your ELMO or database administrator on best practices for your project.

## 5.3 5.3. Creating Hints

- 5 : Add further instructions in the **Hint** box below the **Title** box (i.e. : for a Select Multiple question, add "Select all that apply" in the **Hint** box)
- 6 : Below the Hint box, there is an option to make the question a **Key Question**. This option allows responses to the form to be organized based on the response to the question. If this box is marked, a column showing these answers will be added in the Responses tab.
- 7 : Click **Save** to generate the question
- 8 : To edit the question, return to the Questions page and select the corresponding **Pencil icon**

## 5.4 5.4. Language translations

Question titles and hints can be translated into any language that has been set for the mission. To add a language to a mission, go to the **Preferred Languages** box in the **Settings** menu. When creating or editing questions, the **Title** box will appear for the first language in **Preferred Languages**, followed by the **Hint** box in that language, then the **Title** and **Hint** boxes for the second language, and so on. So, a **Preferred Languages** box that looks like this :

Results in this :

To translate a title or a hint, type the translation in the corresponding box and click **Save**. To view the translation, change the language by clicking **Change Language** in the footer. Questions that have been translated into the selected language will appear translated once that language is selected. For example, the French translation of an English question will appear once French is selected.

#### ELMO SMS Based Form Hints

### hint example

New Mission

User/Team	
Observation Time	
1. Which, if any, of the following prohibited or disruptive circumstances did you observe OUTSIDE the *center*? <i>If there is only one station per "center," then please answer this question as "OUTSIDE the station." Select "None" if you did not observe any prohibited or disruptive circumstances.</i>	<input type="checkbox"/> Prohibited campaigning <input type="checkbox"/> Prohibited campaign material <input type="checkbox"/> Ineffective queue management <input type="checkbox"/> Intimidation <input type="checkbox"/> Violence <input type="checkbox"/> Significant disorder <input type="checkbox"/> Security (beyond regulations) <input type="checkbox"/> Bussing activities <input type="checkbox"/> Other <input type="checkbox"/> None
2. Were there obstacles or barriers on the way to the center that could have inhibited general public access?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Number of stations at the center::

Were there obstacles or barriers on the way to the center that could have inhibited general public access?:

Which, if any, of the following prohibited or disruptive circumstances did you observe OUTSIDE the \*center\*?:

- ☐ Prohibited campaigning
- ☐ Prohibited campaign material
- ☐ Ineffective queue management
- ☐ Intimidation
- ☐ Violence
- ☐ Significant disorder
- ☐ Security (beyond regulations)
- ☐ Bussing activities
- ☐ Other
- ☐ None

*If there is only one station per "center," then please answer this question as "OUTSIDE the station." Select "None" if you did not observe any prohibited or disruptive circumstances.*

ELMO Browser Based Form Hints



AT&T ODK Collect >...

Which, if any, of the following prohibited or disruptive circumstances did you observe OUTSIDE the \*center\*?

*If there is only one station per "center," then please answer this question as "OUTSIDE the station." Select "None" if you did not observe any prohibited or disruptive circumstances.*

- ☐ Prohibited campaigning
- ☐ Prohibited campaign material
- ☐ Ineffective queue management
- ☐ Intimidation
- ☐ Violence
- ☐ Significant disorder
- ☐ Security (beyond regulations)
- ☐ Bussing activities
- ☐ Other

← →

ELMO ODK Collect Tablet Based Form Hints

\* Preferred Languages:

en,fr

Title (English):

Hint (English):

Title (Français):

Hint (Français):



## 5.5 5.5. Tags

Tags are an easy way to organize information around a common keyword or theme. In ELMO, questions may be “tagged” with keywords or descriptors, which may be used to find all of the questions with the same tag. Tags are also used in Reports to help sort information assigned to questions.

The screenshot shows the 'Edit Question: ObserverID102B' interface. At the top, there is a navigation bar with links: 'List Questions', 'Create New Question', 'View Question', and 'Delete Question'. Below this, the form fields are as follows:

- Code:** ObserverID102B (Callout 1 points to the question title area)
- Type:** Time (dropdown menu)
- Title (English):** Time of Arrival
- Hint (English):** (empty text area)
- Tags:** time (with a delete 'X' icon) (Callout 2 points to the tag input box)
- Is Key Question?:** ☐
- API Security Level:** Inherit (dropdown menu)
- Save** button (Callout 5 points to the button)

Callout 3 points to the 'time' tag, callout 4 points to the 'X' delete icon, and callout 5 points to the 'Save' button.

To tag questions :

1. Open or create the question you wish to tag.
2. Type in the **Tags** box. (You may add multiple tags.)
3. Click **Enter** to add a tag.
4. To delete a tag, click on the **X** next to the tag.
5. Click **Save** after adding tags to save your changes.



## 6. Forms : Option Sets

The Option Sets page is where the answers for Select One (ex. “What color is your shirt ?”) and Select Multiple (ex. “What kinds of food do you like ?”) question types can be created. Click the **Option Sets** menu on the main menu bar to create or edit existing Option Sets.

### 6.1 6.1. Create New Option Set

1. Click **Create New Option Set** link available from the **Option Sets** menu. Option set settings appear :

The screenshot shows the 'New Option Set' form with the following elements and numbered callouts:

- 1**: Hamburger menu icon in the top left corner.
- 2**: Text input field for the 'Name' field, preceded by an asterisk.
- 3**: 'Is Geographic?' checkbox.
- 4**: 'Is Multilevel?' checkbox.
- 5**: Text input field for the 'Options' field, preceded by an asterisk.
- 6**: 'Add' button next to the 'Options' input field.
- 7**: 'Save' button at the bottom right of the form.

Other visible elements include a 'List Option Sets' link with a list icon, an 'SMS Guide Formatting' dropdown menu set to 'Automatic', and information icons (i) next to the 'Name', 'SMS Guide Formatting', 'Is Geographic?', 'Is Multilevel?', and 'Options' fields.

2. In the box marked **Name**, create a unique name that summarizes the Option Set being created. Observer users will not be able to view this name.
3. If this Option Set represents geographic information, check the box labeled **Is Geographic ?** (i.e. a set of provinces or regions). Responses that are geographic can also appear on the map in the Dashboard, even if SMS-based.
  - (a) If the options contain coordinates, check the box labeled **With Coordinates ?**
4. If this Option Set needs multiple levels, check the box labeled **Is Multilevel ?** (i.e. example that is non-geographic like the example below ?). See more information on Multilevel sets below.
  - (a) Click **add level** to add a level
  - (b) Type the name of the level (i.e. province or region)
  - (c) Click **Save**
5. Enter the different options for the option set in the box labeled **Options**
6. In the Options box, add existing options by typing them and clicking **Add**. If an option in the drop down menu is not visible, add a new one by clicking **Create New Option**
  - (a) The **Options** box allows multiple options to be typed at once and added or created together by separating option names by commas. Conclude by clicking **Add**
7. Click **Save**

**Multilevel option sets.** Checking the **Is Multilevel ?** box allows for the use of hierarchically organized options. For example, if the question is *Where do you live ?*, you may want to allow for the selection of a certain Country (a level) that always contains a set number of Provinces or States (another level) which have certain Cities within each (one more level) :

Country : United States-> Province/State : Georgia-> City : Atlanta or

Country : Democratic Republic of Congo -> Province/State :Nord-Kivu -> City : Goma

At this time, Multilevel Option Sets can only be used for Select One type questions.

To create a Multilevel Option Set :

1. Check the box labeled **Is Multilevel ?**
2. Click **Add Level**
3. Type the name of the level and click **Save**
4. Repeat step 3 until all levels have been created
5. Click and drag levels so that the first level is at the top and the last level is at the bottom. Do not indent levels :

6. Add options
7. Click and drag options so that options of any level below the first are beneath and indented to the right of the options of the level they are within.
8. Click **Save**

Is Multilevel?: ☒ **1** i

---

Levels: i

- Species en 5
- Role en

Add Level **2**

---

\* Options: i

**6** Add

- Human en
- Mom en
- Dad en
- Brother en
- Sister en
- Dog en
- Cat en

**7**

---

**8** **Save**

In the above example, Species is the first level of the hierarchy and Role is the second. Human, Dog, and Cat are options of Species, and Mom, Dad, Brother, and Sister are options of Role. Note that Dog and Cat do not have options on the Role level. Also note that when using a Tablet, the user must first choose an option at the Species level before swiping to the next page to view the available options at the Role level.

Option Sets can also be created with spreadsheet software, like Excel, and uploaded directly into ELMO :

1. Outside of ELMO, create a CSV or XLS file
2. In the first row, include the name for each level as an individual column header(e.g. Company | Department | Name ).

	A	B	C
1	Company	Department	Name
2	Enterprise	A	Bob
3	Enterprise	A	Bill
4	Enterprise	B	Ted
5	Enterprise	B	Jane
6	Enterprise	C	Joe
7	Enterprise	C	Carl
8	Investco	A	Jeff
9	Investco	A	Sam
10	Investco	B	Emily
11	Investco	B	Nancy
12	Investco	C	Don
13	Investco	C	Rick

3. **Add the names of the options**
4. In ELMO, click on the **Option Set** menu
5. Click **Import New Option Set**
6. Create a Name for the option set
7. Choose the CSV or XLS file created in steps 1-3
8. Click **Import**
9. If the option set is really large, the upload may be sent to **Operations Panel**. You will be able to work on other tasks while the upload continues in the background. You can also click on the **Operations** link to check if your upload was successful

## 6.2 6.2. Edit existing Option Set

1. Click the **Option Sets** menu
2. Click the Option Set requiring editing by selecting the corresponding **Pencil icon**
3. Click **Save**

Note that if you wish to edit a large option set imported via CSV or XLS file, you cannot directly edit the options in ELMO. You will need to edit the original file and import it again. The edited file should be imported under a different name, as importing it under the same name will create another option set with the same name, which could lead to confusion. For example, if an option set was imported and named LOS, the edited option set should be imported under the name LOS #2 or something similar, because naming it LOS will result in a second option set named LOS being created, not the replacement of the first one.

## 6.3 6.3. Import Standard Option Set

1. Click **Import Standard Option Sets**
2. Click the boxes next to the option sets to be imported
3. Click **Import**

## 6.4 6.4. Importing large option sets

1. Click **Import New Option Set**
2. Type a name for your option set in the box
3. Click **Choose File**
4. Select an XLS or CSV file
5. Click **Import**

## 6.5 6.5. Upload a Large Geographic Option Set

To upload a large geographic option set :

1. Outside of ELMO, create a CSV or XLS file
2. In the first row, include the name for each level as an individual column header with “Coordinates” as the last column (e.g. Province | City | District | Coordinates )
3. Add the name for each level
4. In the column for “Coordinates,” include both latitude and longitude in decimal format separated by a comma (e.g. 0.054396, 18.259688)

**NOTE :** To find latitude and longitude coordinates in decimal format :

In Google Maps :

1. Open Google Maps
2. Right-click the place or area on the map
3. Select **What’s here ?**
4. A card appears at the bottom of the screen with more info




In ArcGIS : **Please view Appendix**

Example :

Country	State	City	Coordinates
USA	GA	Atlanta	33.747082, -84.380101

5. In the mission you are working on, click on the **Option Set** menu
6. Click **Import New Option Set**
7. Create a Name for your option set
8. Choose the CSV or XLS file you created
9. Click **Import**
10. If the option set is really large, the upload may be sent to

**Operations Panel.** You will be able to work on other tasks while the upload continues in the background. You can also click on the **Operations** link to check if your upload was successful.

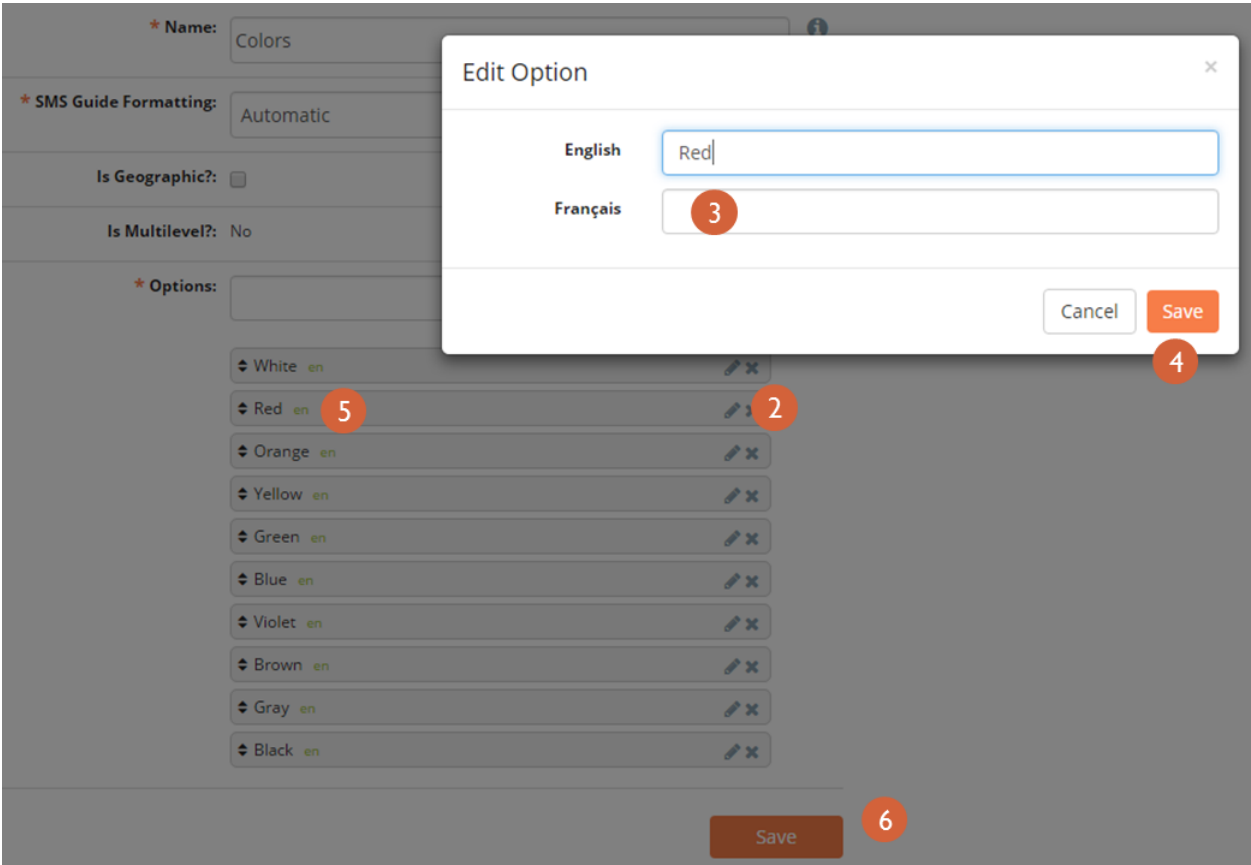
D2	:	  	0.054396, 18.259688	
	A	B	C	D
1	Province	City/District	Commune/Territory	Coordinates
2	Équateur	Mbandaka	Mbandaka	0.054396, 18.259688
3	Équateur	Mbandaka	Wangata	0.030470, 18.232284
4	Équateur	Équateur	Basankusu	1.222329, 19.802599
5	Équateur	Équateur	Bikoro	-0.731622, 18.140574
6	Équateur	Équateur	Bolomba	0.351764, 19.226074
7	Équateur	Équateur	Bomongo	
8	Équateur	Équateur	Ingende	-0.310105, 18.938541
9	Équateur	Équateur	Lukolela	-1.060581, 17.175879
10	Équateur	Équateur	Makanza	1.613769, 19.107542
11	Mongala	Mongala	Bumba	2.184720, 22.470860
12	Mongala	Mongala	Bongandanga	1.507453, 21.073709
13	Mongala	Mongala	Lisala	2.148696, 21.513034
14	Nord-Ubangi	Gbadolite	Gbadolite	4.283803, 21.014185
15	Nord-Ubangi	Gbadolite	Molegbe	4.232063, 20.904815
16	Nord-Ubangi	Gbadolite	Nganza	

## 6.6. Language translations

Options within an Option Set can be translated in a manner similar to translating questions. To translate an option :

1. Either create a new option set and add options or edit an existing option set
2. Click the **Edit** icon adjacent to the option to be translated
3. Type the translation in the box next to the language being translated to
4. Click **Save**
5. Note that the two-letter language code for every existing translation appears next to the option name
6. Click **Save**







# CHAPITRE 7

## 7. Submitting data : Online

Forms can be submitted to ELMO through three different platforms :

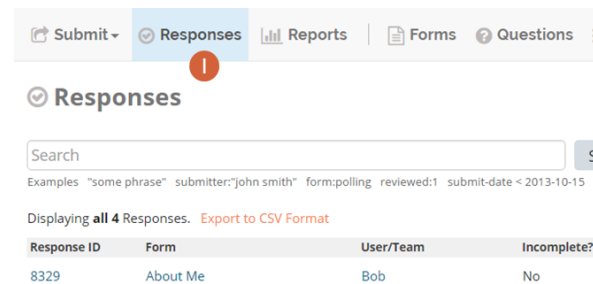
1. Online (Via the ELMO website)
2. Via a tablet
3. Via SMS

To submit a form online :

1. Click the **Submit** menu on the main menu bar of ELMO
2. Click the form for which a response is being submitted
3. Complete the form
4. Click **Save**

To review a response :

1. Click the **Responses** menu



2. Click the pencil icon on the same row as the response to be reviewed
3. Make any necessary changes to the form
4. Mark the box next to **Reviewed ?** This flag is visible alongside each response under the **Responses** menu
5. If desired, add any notes in the text box next to **Reviewer Notes**

## ✓ Edit Response: #8330

 List Responses  View Response  Delete Response

Form: **About Me**

★ User/Team:

Bob

Reviewed?: ☐

4

Reviewer Notes:

5

Name

What is your first name?:

What is your last name?:



Do you have a middle name?:

Are there missing required answers?: ☐



6

Save

Save and Mark as Reviewed

6. Click Save

---

### 8. Submitting data : Tablet

---

Forms can be submitted via tablet. Any Android-based tablet with an Internet or mobile connection can be used to submit data to ELMO. While this section covers submission of forms via an app designed for form submissions, users may also use the browser app on the tablet to submit forms via ELMO Online. To submit forms via the tablet app, the following is necessary :

1. Android-based tablet
2. Internet or mobile connection
3. ODK Collect app (via the Play store)

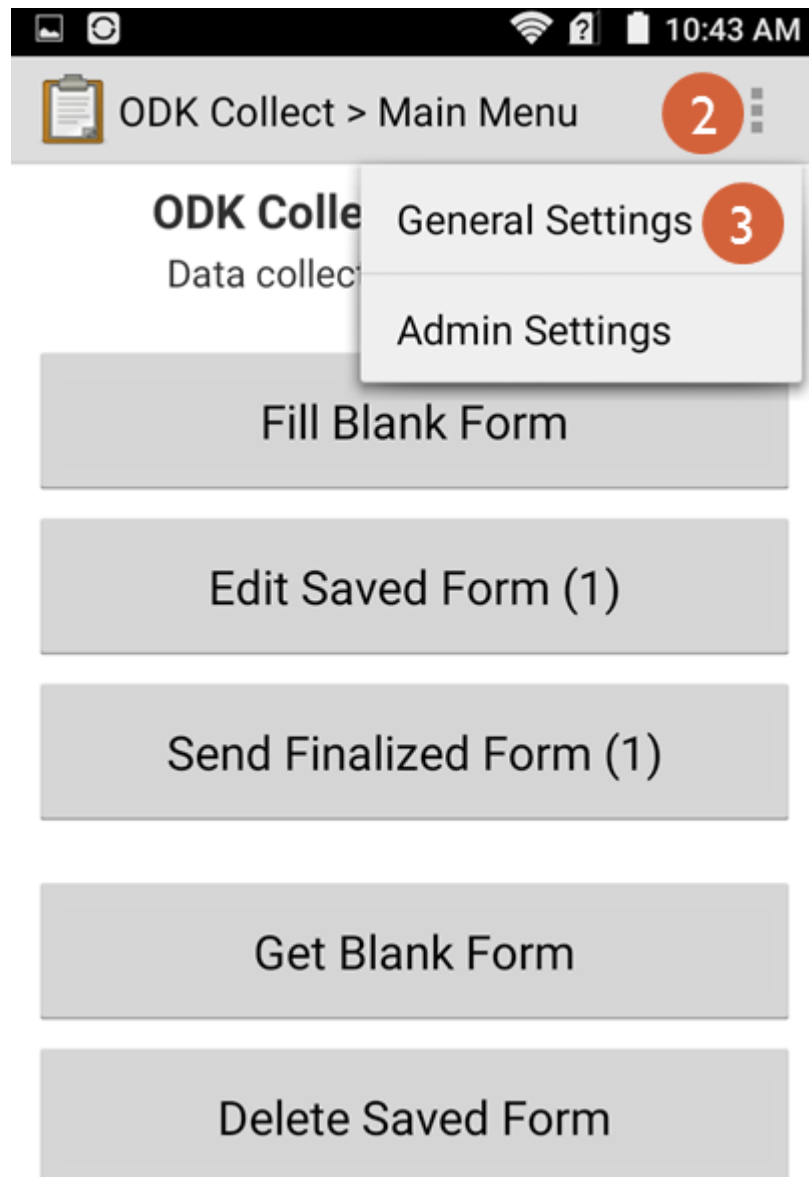
#### 8.1 8.1. Setup of Android tablet/phone

Forms are downloaded, filled out, and submitted in a program called ODK Collect. This program comes pre-loaded on Carter Center tablets, but can also be downloaded from the Play Store on the tablet :

1. Press **Play Store**
2. Search for “ODK Collect”
3. Press **ODK Collect**
4. Press **INSTALL**

Using ELMO via ODK Collect requires an ELMO username and password. To acquire these, contact an ELMO administrator. To enter these in ODK Collect :

1. On the tablet’s home screen, press **ODK Collect**
2. On the ODK Collect home screen, press the **Menu** button. This is located in the top right corner of the screen and appears as three gray squares in a vertical line.



3. Press **General Settings**
4. Press **Configure platform settings**
5. Press **URL**
6. Type the URL of the mission (ex. <https://example.getelmo.org/m/examplemission>)
  - (a) To find the URL of the mission, log in to ELMO Online and go to the mission's home page by clicking the **Home** icon
  - (b) Look in the address bar
  - (c) The URL in the address bar is the same as the URL of the mission, but with the language designation (ex. /en or /fr) removed
7. Press **OK**
8. Press **Username**
9. Type the username
10. Press **OK**
11. Press **Password**

12. Type the password
13. Press **OK**

## 8.2 8.2. Downloading forms

A form must be downloaded to a tablet in ODK Collect before it can be submitted. To download a form :

1. On the ODK Collect home screen, press **Get Blank Form**
  - (a) A box may pop up asking for confirmation of username and password. If entered in General Settings, they should be correct. If not, type the correct username and password and continue.
  - (b) If a screen other than the home screen is shown, press the **Back** button on the tablet until the home screen reappears.
2. Mark the boxes next to the desired form(s)
3. Press **Get Selected**

**Note :** In general, any changes made to forms by mission coordinators during active missions usually need to be downloaded again to the tablets. Coordinators should also guide observers to delete previous versions to prevent confusion. Good team communication is critical !

## 8.3 8.3. Submitting forms

To fill out and submit a form :

1. On the ODK Collect home screen, press **Fill Blank Form**
2. Press the form to be filled out
3. Fill out the form
  - (a) When obtaining GPS locations, stand outdoors. If indoors, stand by the nearest window.
4. When the form is filled out, press **Save Form and Exit** on the last screen
5. On the ODK Collect home screen, press **Send Finalized Form**
6. Mark the box next to the form
7. Press **Send Selected**

## 8.4 8.4. Editing forms before submission

To edit any answers to a form before submission, unmark the box on the last screen next to **Mark form as finalized** before pressing **Save Form and Exit**. Then :

1. On the ODK Collect home screen, press **Edit Saved Form**
2. Tap the form to be edited
3. Tap a question to change its answer, or press **Go To Start** to review each question from the beginning.
4. When finished with editing, mark the box next to **Mark form as finalized** before pressing **Save Form and Exit**

## 8.5. Override Code

ELMO does not typically allow the observer to finalize and send in forms if there are required questions that haven't been answered. However, some situations may arise in which forms need to be submitted without required questions being answered. For example, an observation may be cancelled after observers have been deployed; the observers cannot collect any new data, but the data they have collected is still useful. These observers can bypass the required question and submit the form by entering an override code. The override code is found and regenerated as needed by mission coordinators on the settings page of each mission, and then provided to observers when overrides are desired.

To generate an Override code :

1. Click the **Settings** menu
2. In the **General Settings** area, locate the current **Override Code** and write it down ; the code will no longer be available to view after being regenerated

**Note :** If code regeneration is deemed necessary, the best practice is to regenerate the code **BEFORE** forms are downloaded by observer teams. This avoids complications with communicating code updates and keeping track of different versions of forms. As a rule of thumb, frequent regeneration of codes should not be necessary.

3. Click **Generate** to obtain a new code

In order to use the override code, forms must be set to allow for incomplete responses. When creating or editing the relevant form, check the box that says **Allow Incomplete ?**. Once this is done, the form's **Allow Incomplete ?** setting should reflect **Yes** in the overall list of forms. If not initially set, forms have to be downloaded again by observers in order to take effect.

To submit an incomplete form with an override code, fill out the form as usual, other than the unanswered questions. At the end of the form, a question will appear : **Are there missing required answers?** The options will be **I don't think so** and **Yes**.

1. Select **Yes**
2. Alternatively, select **I don't think so** to go back and answer the required questions
3. Enter the override code

Once the override code has been obtained and successfully entered, the observer can mark the form as finalized and submit.



The image consists of three screenshots from an ODK Collect application on an AT&T phone. The first screenshot shows a question: "Is this form missing any required answers?" with two radio button options: "I don't think so" (labeled with a red circle containing the number 2) and "Yes" (labeled with a red circle containing the number 1). The second screenshot shows a text input field with the prompt "Enter the incomplete override code" and a red circle containing the number 3 next to the input line. The third screenshot shows a dark grey error message box that says "Sorry, this response is required!" with a right-pointing arrow, positioned above a standard QWERTY keyboard.



---

### 9. Submitting data : SMS

---

Forms can also be submitted via SMS. Any mobile phone with SMS capability and access to a cellular network can be used to submit data to ELMO.

Given the space limitations of texts, SMS-based forms are most powerful when designed carefully. Certain types of questionnaires, such as qualitative ones with long-text answers, are usually not a good fit. However, SMS form submission allows the easy aggregations of large amounts of data across distances without good mobile or internet coverage. It also can be cheaper per observer, and may suit certain monitoring and evaluation purposes, quantitative inquiries, or simple surveys.


#### 9.1 9.1. SMS Form Creation


Creating an “SMS-able” form is similar to creating online and tablet forms, there is just one additional flag to set :


1. Click the **Forms** menu
2. Click **Create New Form**

\* Name:


3. Click **More settings (shown below)**
4. Enter a name for the form
5. Mark the box next to **SMSable ?**
  - (a) If you need to forward all SMS form submissions to certain users, mark the box next to **SMS Forwarding ?** and enter the names of the recipients in the next text box ; more information on this can be found below
6. If a form’s submissions need to be authenticated, mark the box next to **Authenticate SMS ?** (more information on SMS authentication can be found below)
7. Click **Save**


**New Form**
Not Published



[List Forms](#)

**\* Name:**  


---

**SMSable?:** ☒ 5 


---

**Authenticate SMS?:** ☐ 6 

---

**Allow Incomplete?:** ☐ 

---

**API Security Level:**  

---

[Fewer settings](#)
7

Once the form is published, an accompanying guide for observers is also generated by ELMO. The “SMS Composition Guide” provides observers with instructions for sending SMS responses, including a unique code for the form. To view the guide :


1. Click on the **Forms** menu
2. Click on the form
3. Click on **View SMS Guide**

An example of the guide is shown below :

**Testing123**
SMS Guide

Please read all instructions to begin. You will use this paper first and then your phone.

1. ☐ Paper
  - a. Write your user/team name here: \_\_\_\_\_ For paper record only
  - b. First answer all the questions below and fill in each dashed box, e.g.: [b]
2. ☒ Phone
  - a. With your phone, begin an SMS to **[unknown number]**.
  - b. Enter the contents of each line on the right side of the page, going from top to bottom.
  - c. Periods are denoted by • and spaces are denoted by ␣. It is important to enter both periods and spaces.
  - d. Example SMS: myh 1.c 2.c,f 3.27 4.d 5.door was locked 6.20160401 7.c


**SMS Message**

Unique form code (required)	
<b>1. Testing123</b> a) 1 b) 2 c) 3 <i>Write the letter for your choice in the box. Write only one letter. e.g. b</i>	myh ␣ 1. <span>[ ]</span> 1. • <span>[ ]</span>
<b>2. Text</b> <i>Write your answer in the box. Abbreviate if necessary.</i>	2. • <span>[ ]</span>

New to Version 5.8 is the ability to submit an SMS response that can be relayed out to a selected group of people. The feature allows users to be placed into groups that can be alerted that a submission has been made to ELMO. This

ability is called SMS Forwarding. If the **SMS Forwarding ?** box is checked, a copy of each SMS submission will be sent via SMS to all users entered in the box **SMS Forward Recipients**.

An example of an appropriate situation to use SMS Forwarding is : A team wants to receive an alert when an incident form is submitted to the system. The incident form is not a regular submission (one may be submitted once every few days or less), so there may not be someone logged into the system to see it submitted. When an incident is reported, it is important to alert an entire group of responders that something is going on. Thus SMS Forwarding should be enabled for this form.








## 9.2 9.2. SMS Authentication

SMS Authentication is a feature that adds an extra measure of protection against outside users from submitting forms to ELMO. Normally, ELMO only accepts submissions that come from observers with their phone numbers pre-registered in the system. Our SMS Authentication feature, when enabled, works by requiring observers to provide an additional code when submitting forms via SMS.

This four-character code is randomly assigned and unique to each user. It is generated when an account is created. The code can be found by clicking on the **Users** menu and then on the name of the user.

### User: Bob

 List Users  Create New User  Edit User  Delete User

* Full Name:	Bob	
* Username:	observer2	
Email:	example2@example.com	
Main Phone:	[None]	
Alternate Phone:	[None]	
Active:	Yes	
* Role:	Observer	
Preferred Language:	[None]	
Notes:	[None]	
SMS Auth Code:	b16d	

To generate a new authentication code :

1. Click **Edit User**
2. Click **Regenerate**
3. Click **Save**

Ideally, authentication codes should never be written down. Users should memorize their codes. If a user forgets their code, an administrator should generate a new one for them.

Activating SMS authentication adds extra security to ELMO by ensuring that the registered phone number and the authentication code belong to the same user. All SMS submissions that do not meet both these conditions are rejected.

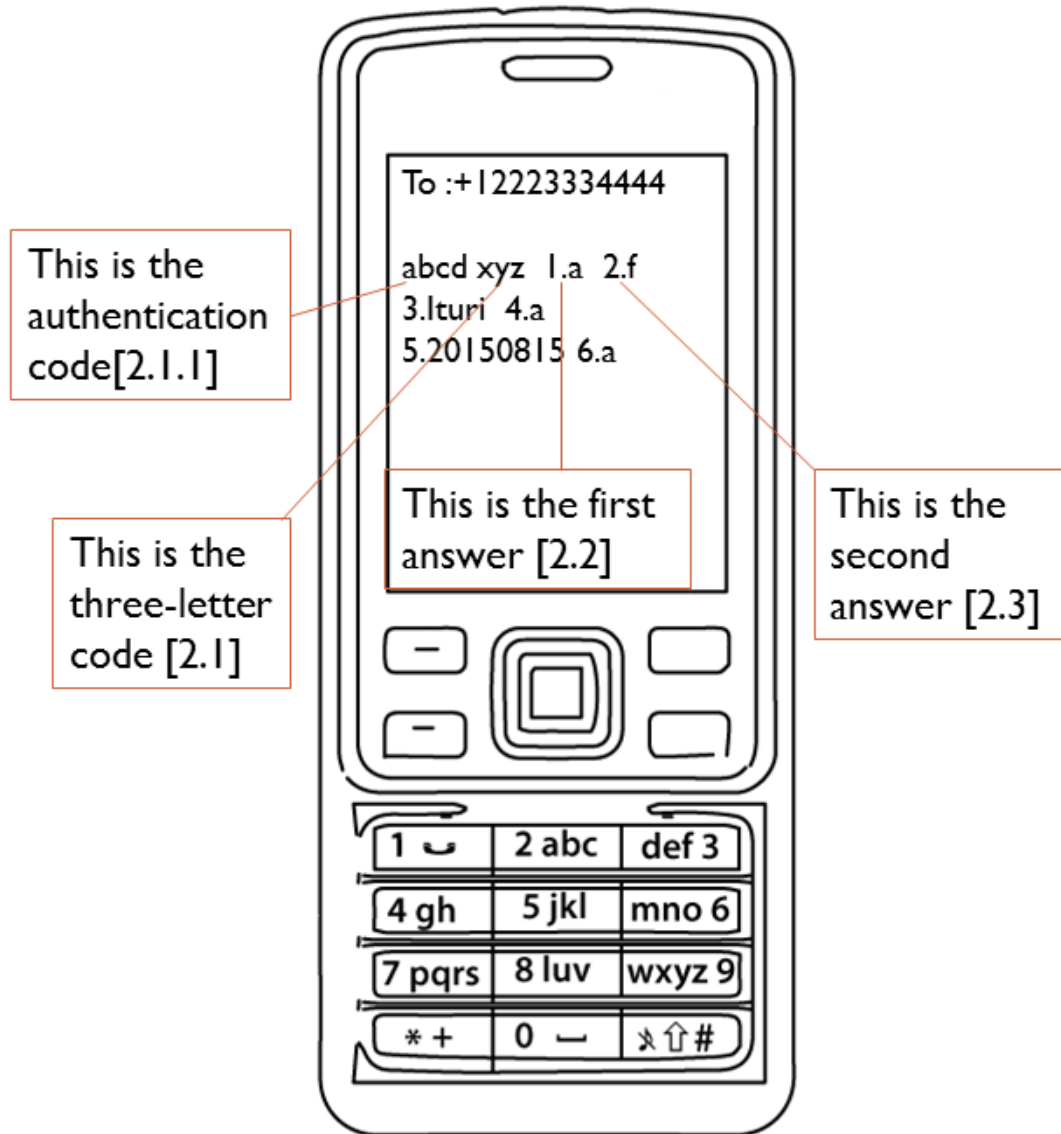
## 9.3. Submitting SMS responses

To submit forms to ELMO via SMS, the following is required :

1. Mobile phone
2. Phone credit
3. *SMS-able ELMO form* with three letter unique code listed in the SMS Composition Guide
4. ELMO number

To submit a form :

1. Choose a form to submit ; only one form at a time can be submitted per SMS
2. Compose an SMS to the ELMO number :
  - (a) Begin your message with the three letter unique code, followed by a space
    - If SMS authentication is required, type the authentication code first, then a space, then the form code



- (b) Type the number of the question being answered, followed by the answer selected
- (c) Type a space, followed by the next answer
- (d) Repeat step 3 until all questions have been answered
  - If not answering a question, skip that question number and answer in the SMS. For example, if question 4 were not being answered, the message would look like this : xyz 1.a 2.f 3.Ituri 5.20150815 6.a
- (e) **Send** the message





## 10. Search

Searching is a critical aspect of being able to find the information you need. This function is available on many parts of ELMO.

### 10.1 10.1. Operators

Keywords are just the words you use in your search. Combining Keywords with Operators give the parameters for a search to occur. Keywords and Operators form Expressions.

Operators in ELMO are : **AND**, **OR**, **NOT**( ! or -), **grouping** operator (parentheses), and **phrase** operator (“”).

operator	description
AND	default implicit operator ; matches when both of its arguments match example (with three keywords and two implicit AND operators between them) : voters ballots stations returns matches with voters AND ballots AND stations.
OR (   )	Matches when any of its two arguments match. example : one   two returns matches that have one OR two example : “Opening Form”   “Polling Form” returns matches that are that are Opening Form or Polling Form.
NOT ( != or -)	Matches when the first argument matches, but the second one does not. example : form != Closing returns the matches of forms that are NOT the Closing form example : ballot -box matches any response with an answer containing the word ballot but NOT the word box.
( ... )	Grouping parenthesis explicitly denotes the argument boundaries. example : (red
“...”	Quotes match when argument Keywords match an exact phrase. example : “The red fox jumped over the fence“ example : “Voter lines went outside the center and down the street“

### 10.2 10.2. Qualifiers

A qualifier is a word you add to an expression to specify where to search. For example, searching **form : observation** within the Responses menu will return all forms with the word “observation” in them. Another example : searching

**type :** long text in the Questions menu returns all questions of the long text type.

Available qualifiers depend on the view or menu that you are working within. They are listed below :

#### **Responses menu**

Qualifier	Function
form :	The name of the form submitted
submitter :	The name of the user that submitted the response (partial matches allowed)
submit-date :	The date the response was submitted (e.g. 1985-03-22)
reviewed :	Whether the response has been marked 'reviewed' (1 = yes or 0 = no)
source :	The medium via which the response was submitted ('web', 'odk', or 'sms')
text :	Answers to textual questions

#### **Questions menu**

Qualifier	Function
code :	The question code (partial matches allowed)
title :	The question title (partial matches allowed)
type :	The question type (text, long-text, integer, decimal, location, select-one, select-multiple, datetime, date, time)
tag :	Tags applied to the question

#### **Users menu**

Qualifier	Function
name :	The user's full name
login :	The user's username
email :	The user's email address
phone :	The user's phone number (no dashes or other punctuation, e.g. 1112223333)
group :	The user group that the user belongs to

#### **SMS Menu**

Qualifier	Function
content	The message content (partial matches allowed)
type :	The message type (incoming, reply, or broadcast) (partial matches allowed)
user-name	The username of the sender or receiver (partial matches allowed)
name :	The full name of the sender or receiver (partial matches allowed)
number :	The phone number of the sender or receiver (partial matches)
date :	The date the message was sent or received (e.g. 2015-01-29)
date-time	The date and time the message was sent or received (use quotation marks and 24-hr time, e.g. "2015-01-29 14 :00")

## 11. Reports and Data Analysis

ELMO stores and aggregates incoming data so that field and headquarters staff can quickly chart, graph, and analyze information while writing reports. These reports allow for preliminary conclusions to be made in a timely manner. However, other tools may be more useful for more detailed analysis. For this, data can be exported from ELMO for further review in other analytical software.

### 11.1 11.1. Internal report building

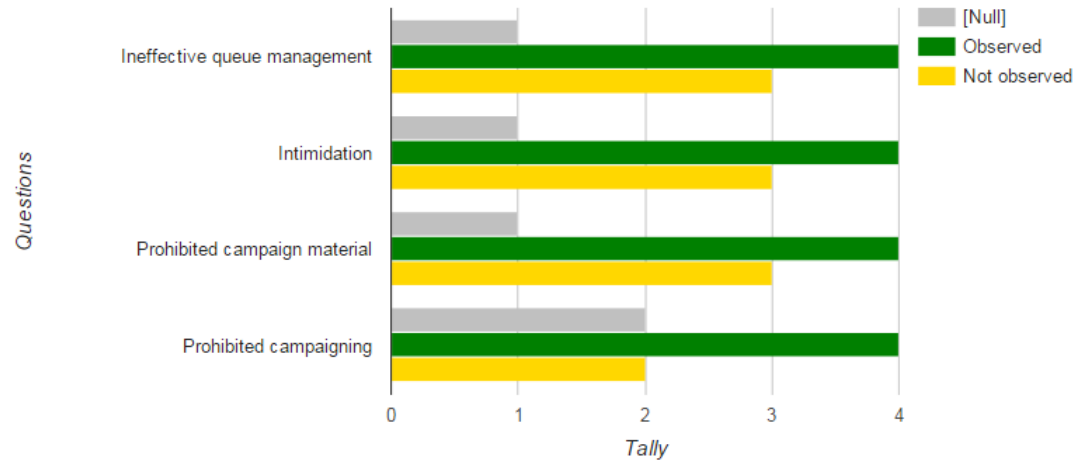
Submitted data can be visualized in the Reports section of ELMO. Click the **Reports** menu on the main menu bar to access this section. Coordinators can generate reports for response submissions from all users while observers are only able to generate reports from their own responses. To create a report, click the **Create a New Report** link at the top of the page.

Three types of report options will be offered :

1. **Tally Report** : Shows totaled tallies of answers or responses, grouped by attributes of interest. Examples :

		Answers			Total
		[Blank]	Observed	Not observed	
Questions	Ineffective queue management	1	4	3	8
	Intimidation	1	4	3	8
	Prohibited campaign material	1	4	3	8
	Prohibited campaigning	2	4	2	8
	Total	5	16	11	32

— Table



### — Bar Chart

If selected, the following prompts/options are available :

New Report: Options

What would you like to tally?

☐ Answers per Question  
e.g. Tally of Yes's and No's for all Yes/No questions 1.1

☐ Responses per Answer/Attribute  
e.g. Tally of responses per form for each team

How would you like to display the results?

☐ Table
☒ Bar Chart 1.2

How should questions be displayed?

☒ Full Titles (Easier to Read) 1.4
☐ Codes Only (Saves Space)

What is the report title?

 1.5

Back
Next
Run

2. **List Report** : A raw listing of answers and attributes for a set of responses. For example :

Time Submitted	Date Submitted	Reviewed
Dec 29 2015 15:19	Dec 29 2015	No
Dec 29 2015 15:19	Dec 29 2015	No
Dec 29 2015 18:44	Dec 29 2015	No
Dec 29 2015 18:44	Dec 29 2015	No
Jan 07 2016 17:40	Jan 07 2016	No
Feb 01 2016 03:40	Feb 01 2016	No
Feb 01 2016 03:54	Feb 01 2016	No
Feb 25 2016 20:27	Feb 25 2016	No

If selected, the following prompts/options are available :

New Report: Options

How should questions be displayed?

☒ Full Titles (Easier to Read)
 ☐ Codes Only (Saves Space)

What is the report title?

New Report

< Back

Next >

Run

- (a) How the titles should be displayed – **Full Titles** (Full text of questions) or **Codes Only** (Displays unique code given to question in the Question creation mode)
  - (b) A title for the report
  - (c) The form responses to include in the report
  - (d) Columns to include
3. **Standard Report : A question-by-question summary of the** responses for a specific form. The purpose of this report is to help give a ready-made overview of responses for a specific questionnaire. For example :

		Observed	Not observed
#1.1	Prohibited campaign material	50.0% (1)	50.0% (1)
#1.2	Prohibited campaigning	50.0% (1)	50.0% (1)
#1.3	Ineffective queue management	50.0% (1)	50.0% (1)
#1.4	Intimidation	50.0% (1)	50.0% (1)

If selected, the following prompts/options are available :

New Report: Options
×

---

What form would you like to report on? Choose a Form... 3.1

Split report by a special question? ☐ 3.2

Group questions by tag? ☐ 3.3

How should questions be ordered? ☒ By Number ☐ By Type 3.4

How should questions be displayed? ☒ Full Titles (Easier to Read) ☐ Codes Only (Saves Space) 3.5

Show text responses? ☒ Show All ☐ Don't Show Long Text Questions ☐ Show None 3.6

What is the report title? New Report 3.7

◀ Back Run

- (a) Form to report on
- (b) Whether to split the report by responses to a special question
- (c) Whether to group questions by tag
- (d) Whether to order questions **By Number** (the order they appeared in the form) or **By Type**
- (e) How the titles should be displayed – **Full Titles** (Full text of questions) or **Codes Only** (Displays unique code given to question in the Question creation mode)
- (f) Whether to show all text responses, not show long text responses, or not show any text responses
- (g) A title for the report

## 11.2 11.2. Exporting to Spreadsheets (.csv)

If the options available within the Reports section do not meet

mission needs for analyzing collected data, the data can be exported to a .csv file, a format readable in many quantitative and qualitative analysis platforms (e.g Excel, R, Tableau, MaxQDA). | To export data to a CSV file :

1. Click the **Responses** menu
2. Click **Export to CSV Format**

Tally and List Reports can also be exported to a CSV file :

1. Click the **Reports** menu
2. Click the report to be exported
3. Click **Export Data To CSV Format**

## 11.3 11.3. External connections - Tableau

Tableau is a data visualization software that allows to present ELMO data in a visually engaging and interactive fashion. If you love to use Tableau and have a license, this is how to get started with ELMO.

Things that you will need are : SERVER credentials, and MySQL DATABASE credentials. These are different from ELMO accounts or logins. These are things that your ELMO administrator should have on hand.

### Establishing a Secure Tunnel

In order to connect to Tableau, you will need to establish a “secure shell tunnel” or encrypted connection between your computer and the server that hosts ELMO. There are a number of ways that you can do this such as clients such as PuTTY (for Windows) or direct through a terminal. Check with your ELMO administrator for recommendations.

The registered port for MySQL connections is 3306.

An example of establishing the tunnel via terminal might look like this :

```
ssh -N -p 22 @ -L 9990//3306
```

which sometimes hangs even if success is achieved.

You may also have to make sure you have the appropriate ODBC drivers :

<https://www.tableau.com/en-us/support/drivers>

(so, n.b., if all this doesn't make sense to you, find your local friendly ELMO administrator who should be able to make sense of this !)

### Connecting Tableau to the Database

1. Open Tableau.
2. Click **Data > Connect to Data ...** (or on the left **Connect** sidebar, look under **To a Server**)
3. Select **MySQL**.
4. For server name, enter IP address
5. For port, enter the port you established through your tunnel session (in the example above it is 9990)
6. Enter the Database username and password. (this is not the same as the server credentials)

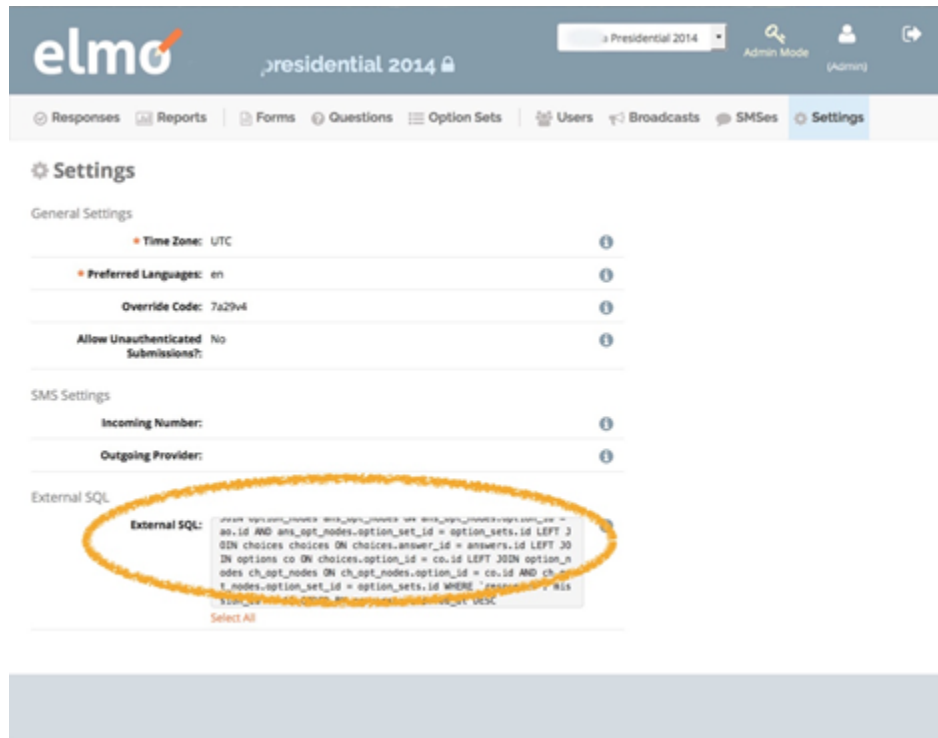
From there you should select the particular database instance that houses your data.

### Making sense of the data in Tableau

From this point onwards, there are a number of ways that you can examine the data – if you need help to understand the tables and relationships, check out the Entity Relationship Diagram on our GitHub at <https://github.com/thecartercenter/elmo/blob/master/docs/erd.pdf> (also available at the bottom half of the introductory GitHub page).

But, one way to easily get started is to take advantage of the custom SQL query we provide in ELMO. For each mission, in the settings pane, you can see a nifty ready query :

In Tableau, select the database and then



1. Select **Custom SQL**
2. Copy the Tableau SQL code from ELMO as it appears above.
3. Switch back to Tableau and paste the Tableau SQL code into the **Custom SQL**
4. In the final box, give the connection a name such as 'Presidential Runoff 2014'. You will be able to reuse this connection with other worksheets.

Click **OK**. The Measures and Dimensions should appear in the left panes.



## 12. fonctionnalités et informations supplémentaires

### 12.1 12.1. messages de diffusion

Coordinators may want to broadcast messages to observer teams in the field in the instance of a change of polling location, schedule, or another event. Administrators and coordinators can send Broadcasts via email or SMS to individual users or all active users on a mission.

Please note that you need an ELMO SMS gateway with SMS credit established before messages can be sent.

To send a Broadcast Message :

1. Click the **Users** menu
2. Select the user(s) to receive a message by marking the boxes next to their name(s)  
**NOTE :** Observers **do NOT** have the ability to reply to broadcast messages – instruct observers to contact the observer coordinator directly if they need to discuss a broadcast message or other issue.
3. Click **Send Broadcast**—this action will direct to a page where the medium of the broadcast can be selected, and the subject and its content can be entered into a text field

Submit Responses Reports Forms Questions Option Sets Users

**Users**

Search Search

Examples john smith phone:+443726458364 login:jsmith email:jsmith@example.com Search Help

Displaying all 6 Users. Select All Send Broadcast Export as vCard Delete Multiple Users Create New User Create Multiple Users

	Full Name	Username	Email	Main Phone	Alternate Phone
<input checked="" type="checkbox"/>	Alan	observer1	example1@example.com		
<input type="checkbox"/>	Bob	observer2	example2@example.com		
<input checked="" type="checkbox"/>	Carl	observer3	example3@example.com		

4. Select a medium from the drop down list :
  - (a) **SMS preferred** : will try to send a SMS and then an email, if unsuccessful
  - (b) **Email preferred** : will try to send an email and then an SMS if unsuccessful
  - (c) **SMS only** : will send only SMS
  - (d) **Email only** : will send only email
  - (e) **Both SMS and Email** : will send both SMS and email
5. Type a subject in the Subject line
6. Type your broadcast message in the Message box
7. Click **Send**

### Send Broadcast

 [List Broadcasts](#)

To: Alan, Carl

\* Medium:

4

\* Subject:

5

\* Message:

6

7

Send

## 12.2 12.2. Converting and Displaying GPS Coordinates in ARcGIS 10

There are many ways of representing locations. One of the most common uses angular latitude and longitude coordinates to specify the location of a point. These [Geographic coordinates](#) may be expressed in several different notations, including Decimal Degrees (DD), Degrees Decimal Minutes (DDM), and Degrees Minutes and Seconds (DMS). The formula for [converting Degree Minutes and Seconds to Decimal Degrees](#) is discussed in the ArcGIS 10 Help. Another common method is to use a projected coordinate system and X and Y coordinate pairs, that is, two sets of numbers in a planar Cartesian system.

Gridded systems, like Universal Transverse Mercator ([UTM](#)), United States National Grid ([USNG](#)), Military Grid Reference System ([MGRS](#)) divide the world into zones which are projected and then overlaid with one or more grids. Within the grids, point locations are specified by their position East and North the zone origin or the southeast corner of the cell. For USNG and MGRS the numeric values of the northing and easting can vary from 1 to 5 digits, depending on the precision of the location (they must both use the same number of digits) and then the values are concatenated.

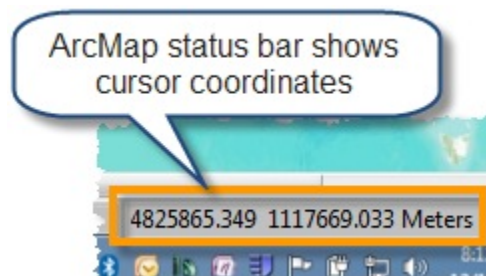
Two less frequently used systems, the Global Area Reference System (GARS) and Geographic Reference System (GEOREF), divide the world into polygonal areas based on different sets of nested grids and encode locations as a string of grid ID values.

System	Coordinates
DD	-75.155106111, 39.983510278
DDM	-75 9.306366667, 39 59.010616667
DMS	-75 9 18.382, 39 59 0.637
UTM	18N4867574425938
USNG	18SVK8675725939
MGRS	18SVK8675725939
GARS	210LV22
GEOREF	GJQK5069459011

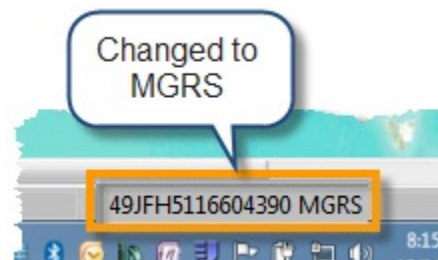
Each of these ways of representing a location results in different strings of characters with a variety of formats. This table shows the coordinate representation for Philadelphia, Pennsylvania in the US (75° 9' 18.382" West longitude by 39° 59' 0.637" North latitude) in each of these systems. This is not an exhaustive list of the delimiters and hemisphere indicators that are used in each system.

ArcGIS 10 can convert coordinates expressed in each of these systems into the others, and provides ways of displaying and accepting coordinate input in most of them.

### Displaying Coordinates

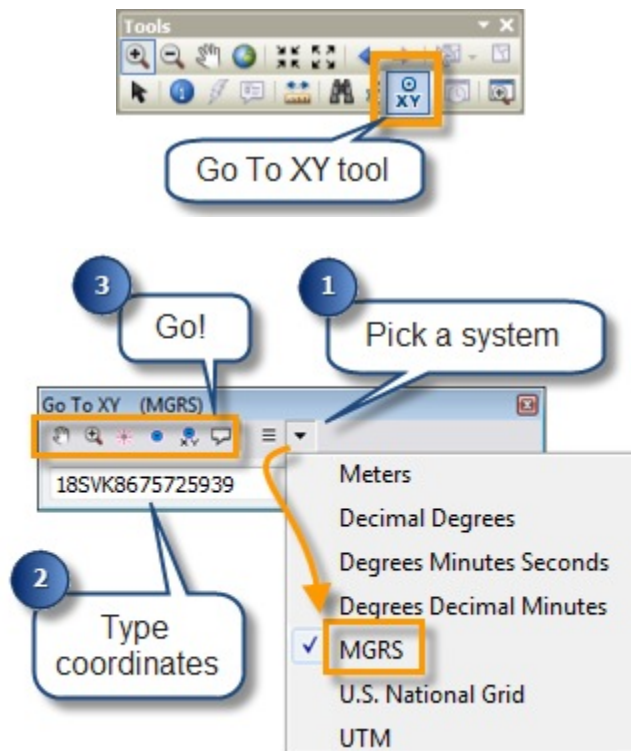


You can see the coordinate value for a place on a map in the ArcMap status bar, at the bottom right of the application. The default coordinate format in the status bar is based on the units of the first layer added to the map, often feet, meters, or degrees of longitude/latitude.



You can change the coordinate display to use any of these systems (except GARS and GEOREF) by right-clicking Layers in the table of contents and selecting Properties. On the General tab, under Units, you can select the type of coordinates you would like to see, for example MGRS.

### Go To XY Coordinates

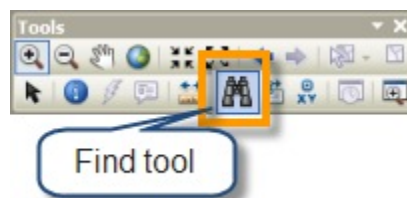


If you have a set of coordinates and you want to find their location on the map, you can use the Go To XY tool.

Open the tool from the toolbar, then select a coordinate format. Type (or paste) the coordinates into the text box and click one of the buttons to Pan to, Zoom to, Flash, Add a Point, Add a Point Labeled with Coordinates, or Add a Callout.

The Go To XY tool also keeps a record of recent locations, which you can return to by clicking the Recent button and selecting the location. You can use this to manually convert coordinates from one format to another. To do so, select your input coordinate notation, input your coordinates and pan to the location. Then select your new output format and select the coordinates from the Recent button.

### Find MGRS coordinates



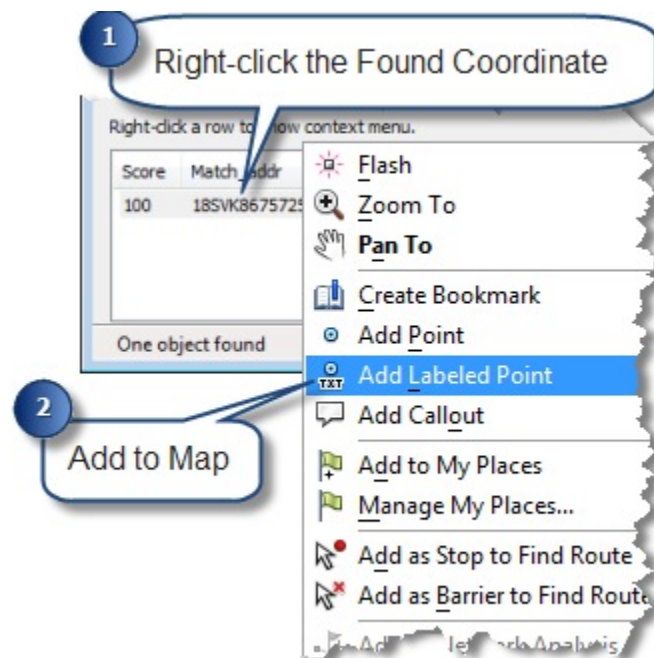
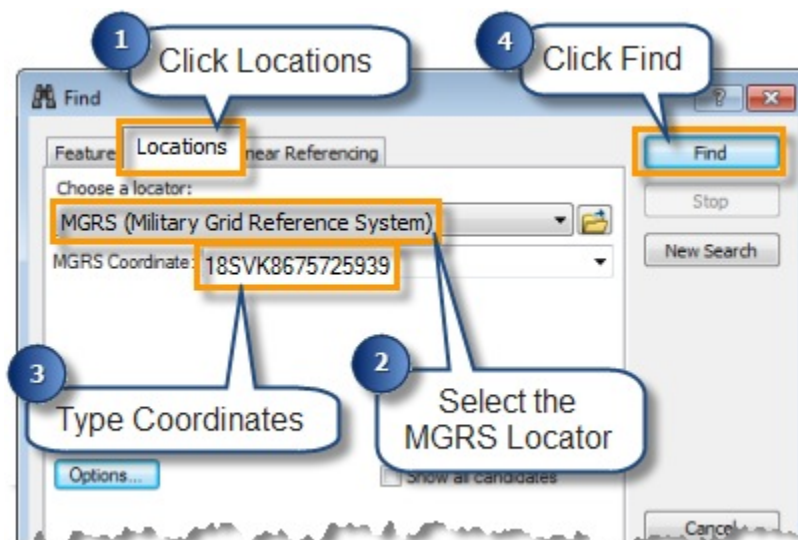
If you work with MGRS coordinates, the Find tool has an MGRS Locator that works like the Go To XY tool, but provides additional capabilities tailored to the MGRS system.

To use these, open the Find tool on the Tools toolbar. In the Find tool dialog box, click the Locations tab, select MGRS from the locator drop-down list. Then type (or paste) the coordinate into the MGRS box and click Find.

The tool will return a list of location matches (in our case there should only be one). If you right-click on the coordinate you have various options for marking the location.

So what's different about the MGRS Locator ?

The locator has options for matching shortened MGRS coordinates when you work in the same Grid Zone Designator



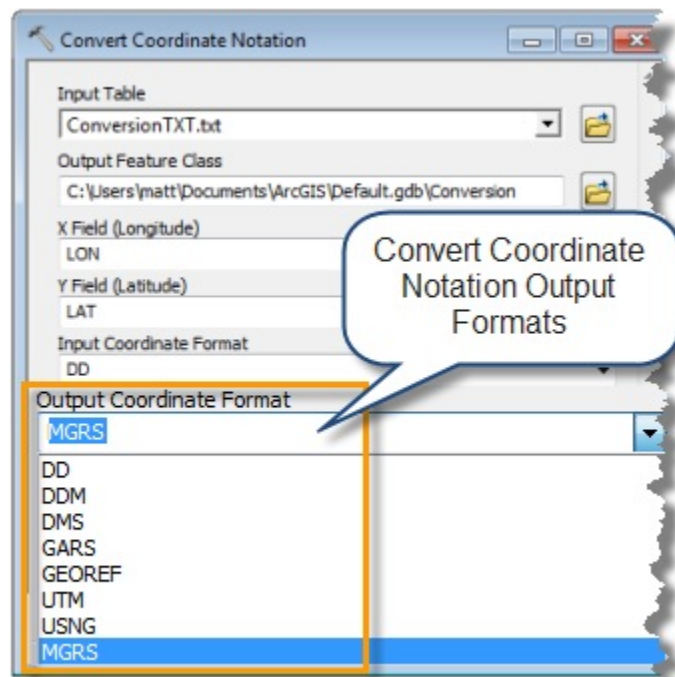
(GZD). It has options to pull the GZD and 100,000 meter square identifier from the current map center, a default value, or use the last one used. This is convenient if you work in the same GZD over and over again, you can type “8675725939” or “VK8675725939” rather than “18SVK8675725939”, which will save you a few extra key strokes when entering your coordinates.

### Converting Tables of Coordinates

	CITY_NAME	CNTRY_NAME	LON	LAT
►	Brasilia	Brazil	-47.897745	-15.792109
	Goiania	Brazil	-49.255	-16.727
	Campo Grande	Brazil	-54.616	-20.451
	Arequipa	Peru	-71.523	-16.398
	La Paz	Bolivia	-68.146245	-16.499009
	Santiago	Chile	-70.647518	-33.475027
	Guayaquil	Ecuador	-79.907873	-2.203091
	Trujillo	Peru	-79.03	-8.112
	Quito	Ecuador	-78.524282	-0.2295
	Callao	Peru	-77.144	-12.057

There may be times when you have a lot of coordinates that you need to convert to another system. If you have the coordinates in a table, you can convert all of them by running the Convert Coordinate Notation (CCN) geoprocessing tool.

For example, you might convert a table of longitude and latitude values in decimal degrees (DD) to MGRS.



With the CCN tool you can convert between DD, DDM, DMS, UTM, USNG, MGRS, GARS, and GEOREF.

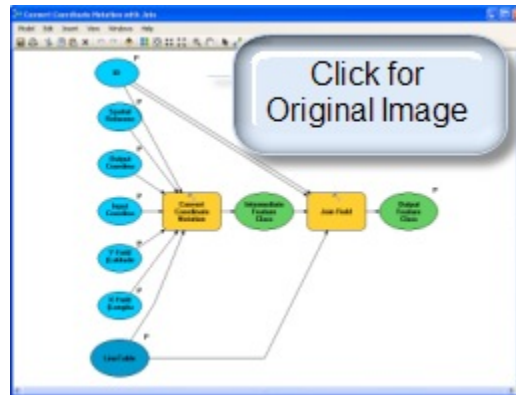
The tool takes your table of coordinates and converts them to point features with an attribute containing the new output notation.

It is important to note that the CCN tool is a geoprocessing tool and represents a single-focus process of converting a table of coordinates ; its only function is to do the conversion. The output point features do not have the same fields as the input table.




If you want the output points to have all of the attributes of the input table (in addition to the new notation field) you must put the tool in a [Model Builder](#) model that uses the [Join Field](#) tool to attach the original fields.

The model would look something like this :



This table lists the coordinate notations mentioned above, and shows the different tools and functions that support them.

	Status Bar	GoToXY 	Find 	CCN
DD	✓	✓		✓
DDM	✓	✓		✓
DMS	✓	✓		✓
UTM	✓	✓		✓
USNG	✓	✓		✓
MGRS	✓	✓	✓	✓
GEOREF				✓
GARS				✓

*Content provided by Matt Funk*

## 12.3 12.3. Device Security

Data sent to ELMO should be set up securely using HTTPS (**Administrators take note !**). In addition, each physical device should also be secured. Here are some security methods you might consider :

1. Use a Screen Lock
2. Encrypt Device with SD Card Encryption
3. Turn off Developer Options
4. Protect Device from Harmful Applications
5. Delete forms automatically after being sent in ODK Collect

These suggestions are covered in more detail below. They are just here for your consideration ; you should refer to the Android Quick Start Guide for more information. If your device is on Android version 5.x, [click here](#) ; if it is on 6.x, [click here](#).

### 12.3.1 12.3.1. Use a Screen Lock

Think of a screen lock as a password to unlock a phone. Using a screen lock is important for security. If someone is in physical possession of a device, to access the device's information, they will need to know how to unlock the device.

Android has several options for screen locks. These include drawing a pattern, a numerical keyphrase, and a text passphrase. On newer devices, fingerprint scanning is also possible as a screen lock.

A screen lock should allow the user of the device easy access to the device and their data, but should be difficult for someone else to guess or access.

#### Opening the Screen Lock Menu

To change screen lock settings, go to the main settings menu and look for a Lock Screen, Screen Lock, or Security or something similar.

#### Android 6.0 and up

*Settings > Security > Screen Lock*

Open the device's Settings application. Look for Security and select it. Then select Screen Lock.

#### Android 5.0

*Settings > Lock screen*

From the Home screen, pull down the main menu by swiping down. The gear menu in the right corner opens Settings. Inside Settings, find and select Lock Screen.

#### Changing The Screen Lock

Once inside the screen lock menu, select the screen lock you wish to use. You will be guided through how to change the screen lock. The screen lock options available depend on each device, its operating system (OS), and the version of the OS on the device.

### 12.3.2 12.3.2. Encrypt Device with SD Card Encryption

If a device is lost, stolen, or in someone else's possession, they may be able to gain access to the data on the device by physically accessing the data card. Encryption stores data in a scrambled state. Encryption ensures that only those with credentials can unscramble or unencrypt the data and read it.

According to Android documentation : "Encryption stores. . . data in a form that can only be read if you have the right credentials. This can provide additional protection in case [a] device is stolen." (1) Types of data that can be encrypted include "account data, app data, music and other media, and downloaded information." ([source](#))

#### To Access Encryption Settings

In the main settings menu, look for *Security* or similar. Inside the security screen, look for *Encryption*, *Encrypt phone*, *Encrypt tablet*, or similar.

#### Android (5.0, 4.4 and lower)

*Settings > Security > Encrypt [device]*

#### Encrypting Your Device

Inside the Encryption menu, follow the instructions on the screen to encrypt the device. You will need to have access to a charger and set aside an hour or more for the encryption process.

#### Use Encryption with a screen lock

It is recommended to use a screen lock if encryption is used on a device. Without a screen lock, encryption's security protection is reduced.



Some devices require a screen lock if encryption is enabled. Some devices only allow certain types of screen locks to be used, such as a pin or password, when encryption is enabled.

### 12.3.3 12.3.3. Turn off Developer Options

Developer options are settings within the Android system that allow a device to be used to develop and debug an application. If you are not actively testing an application, you do not need to keep developer options on.

#### **Determine If You Have Ever Activated Developer Options**

By default, developer options are completely hidden in Settings. Look in the main settings menu. Is there an option listed for *Developer Options* or something similar?

If not, developer options have not been activated on the device. You can skip the remaining steps in this section.

If *Developer Options* or something similar is listed, you should follow the next steps to secure the device.

#### **Open Developer Options**

*Settings > Developer Options*

#### **Turn Off Developer Options**

Once *Developer Options* is open, turn off *Developer Options*.

Inside *Developer Options*, if you see that *Developer Options* are already turned off on this device, this device is protected. You can skip the remaining steps in this section.

Turning off *Developer Options* may involve moving a toggle from the “on” to “off” position. Or it may involve deselecting all options so that no checkboxes remain checked.

#### **Android 5.0**

On the top bar inside *Developer Options*, switch the toggle from *On* to *Off*. You will know *Developer Options* are turned off when the options on the screen are grayed out.

### 12.3.4 12.3.4. Protection from Harmful Applications

Each time an application is installed, it has the potential to access data and media, information about other apps, geolocation, and a great deal of information about each device. It is important to install only trusted applications and to remove any applications that are not trusted.

After the initial install of necessary programs on the device, such as ELMO software, device preparers can add security measures to protect against harmful applications.

#### **Use the Approved Application Store**

It is recommended to install applications through the operating system’s approved application store. For Android devices, this means most applications should be installed through *Google Play Store*. The applications found in the operating system’s approved application store have been vetted to ensure the application does not contain malware. Despite this, it is possible for an application from the approved application store to be rouge in some way, including asking for permissions to information on your device that it does not need. It is good practice for election observers and device preparers to only install programs that are needed and trusted.

#### **Turn Off Unknown Sources**

To ensure only applications from the approved application store can be used, device preparers can turn off the *Unknown Sources* setting.

Inside the device's settings, look for a setting related to types of applications that can be installed. On some devices, this may mean making sure the box marked next to *Unknown Sources* is not checked or to uncheck it, if needed. On other devices, there may be a different way to turn off *Unknown Sources*.

### Android 5.0

*Settings > Security > Phone Administration > Unknown Sources*

### Turn on App Verification

App verification ensures that an application undergoes a security check on install and periodically. Look for a setting inside the main settings security menu related to “*app verification*,” “*verify apps*,” or something similar. Ensure that application verification is enabled.

### Android 5.0

*Settings > Security > Phone Administration > Verify Apps*

Make sure the box next to Verify apps is checked.

### Android 6.0

1. Access *Google Settings*. You can use one of these methods :
  - (a) Open the *Settings* Touch *Google*.
  - (b) Open the *Google Settings*
2. Inside *Google Settings*, touch *Security*.
3. Under *Verify Apps*, ensure that *Verify Apps* is turned on and turn on *Scan device for security threats*.

### Uninstall questionable applications

If questionable apps have been installed on a device or there are applications that are no longer needed on the device, it is recommended that these applications be uninstalled for added security.

## 12.3.5 12.3.5. ODK Collect : Delete after sending forms

In case you are worried about sensitive information you've collected and “what if I lose my device,” you may want to also consider removing any filled out forms on the ODK Collect app after they have been submitted and received by ELMO.

The “Delete After Send” option is available through ODK Collect settings. For more information, please visit <https://opendatakit.org/>.

---

## 13. Information for Administrators

---

More in-depth information on the following topics is provided in this section :

- \* SMS Gateways (FrontlineSMS/Twilio)
- \* Standards and Data Integrity

### 13.1 13.1. FrontlineSMS gateway setup

You can turn your Android smartphone or tablet into a gateway using the FrontlineSync app and a FrontlineCloud account. Check out Frontline's documentation for the full details (<http://www.frontlinesms.com/>).

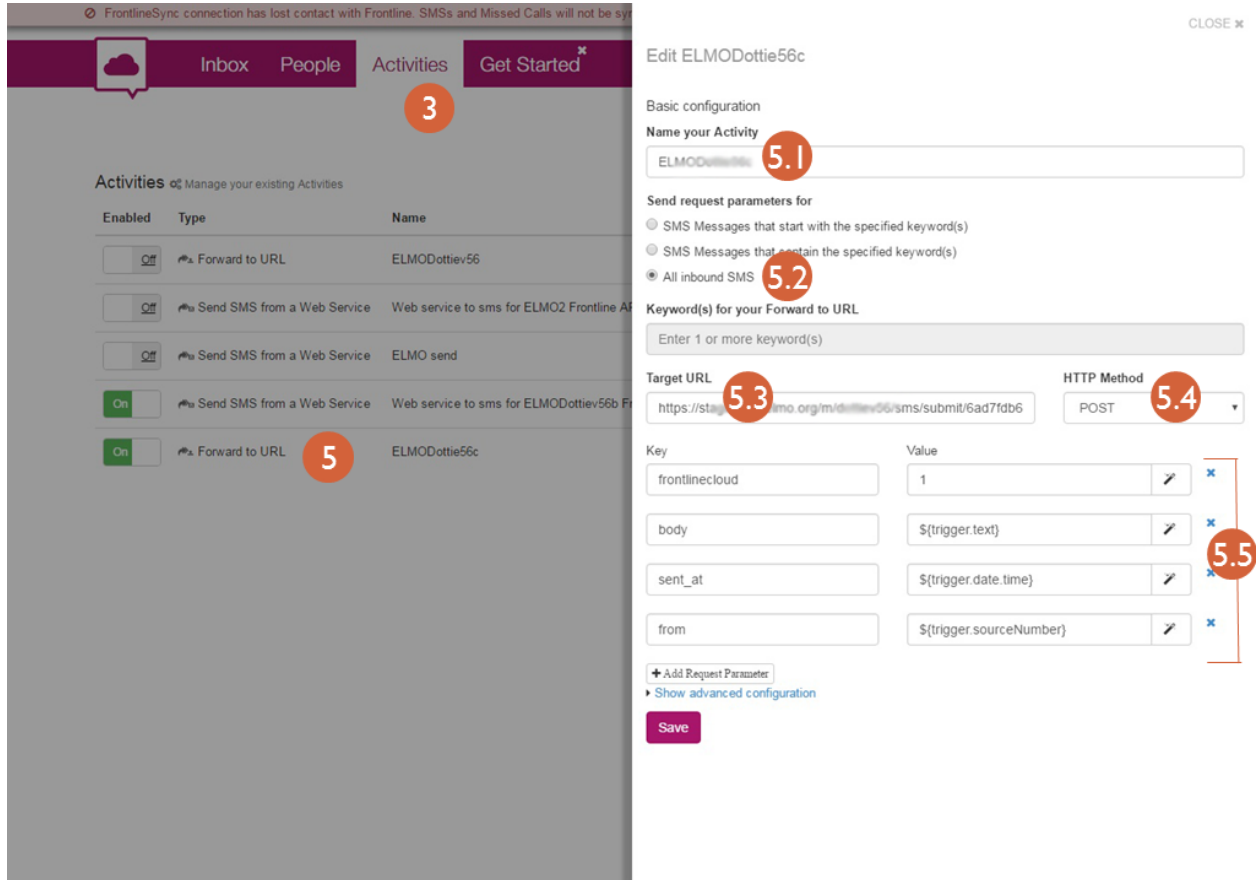
Before entering your settings on ELMO, you will need to set things up on FrontlineCloud in order to obtain the Frontline API key.

#### I. FrontlineCloud

Logging into your FrontlineCloud account, establish the following settings :

1. Choose **Connect to a Mobile Network**
2. Select **FrontlineSync**
3. Select the **Activity** menu
4. Create a **New Activity**
5. Select **Forward to URL**
  - (a) Name your Activity : *this can be your mission name or whatever you want*
  - (b) Select **"All inbound SMS"** from the toggle choices
  - (c) Target URL is the URL generated the Incoming SMS Token in the Settings panel of the ELMO Mission
  - (d) HTTP Method : POST
  - (e) Create Keys :

from	\${trigger.sourceNumber}
frontlinecloud	1
sent_at	\${trigger.date.time}
body	\${trigger.text}



If an API is automatically generated for you, terrific ! But if not, here are the steps you need to take in order to set up an API :

1. Choose the Settings gear in the upper right of the screen
2. Select **API web services and integrations**
3. Click the **Connect a web service** button
4. Select “Connect an external web service to your workspace”
5. Name it something meaningful (e.g. “ELMO API”)

A new row will appear on the screen with an API key in the details, beginning with “API Key :” Everything after the “ :” is the API key, remember that information for the next steps.

## II. ELMO :

In ELMO, you can establish multiple incoming and outgoing SMS numbers on different gateway services such as Twilio or Frontline. We will deal with the simplest case first, a single number for SMSes. In settings,

1. Add the SIM card number to the **Incoming Number** field. (if adding more than one number, separate the numbers with a comma)

2. Then add the API code from Frontline into the **Frontline Cloud Settings** field
3. Set the **Default Outgoing Provider** to **FrontlineCloud**
4. Save the settings

### Shared SMS Settings

**Incoming Number(s):** +xxxxxxxxxx, +xxxxxxxxxx

**Incoming SMS Token:** ac35172dab6a24bd71d0edf1963eb09c Regenerate

**Default Outgoing Provider:** None, **FrontlineCloud**, IntelliSms, Twilio

### III. Android Device :

To make a Android phone or tablet into a gateway, you need to download and install FrontlineSync App from the Google Play store. Then, enter the following settings :

1. Tap on Settings in the FrontlineSync app
2. Tap **Configure Connection**
3. Enter the credentials for the FrontlineCloud activity you set up earlier
4. Tap the **Connect** button
5. New options will appear, now click the first two checkboxes :
  - *Send messages using this Android*
  - *Upload incoming messages from FrontlineSync*
6. Use the slider to set a check for outgoing messages “**Every 1 minute**”
7. Click the **Update** button

A message should appear declaring success, with one more button to tap “**Done ! Start Using FrontlineSync.**”

**Note :** MAKE SURE TO USE THE DEFAULT MESSENGER APP ON THE PHONE — ENCRYPTED SMS, such as What’s App, DOES NOT WORK. Look up Android settings help for how to make sure that your using the default messenger app.

#### Some additional (troubleshooting) notes, maybe :

If you change settings on your FrontlineCloud after having set up your Android Device, you may need to enter your credentials to configure your connection, and make sure everything is up to date.

Also, if you set up more than one device or phone to a FrontlineCloud account, please pay attention to the “connections to mobile networks” settings, which is available off the gear menu located on the upper right corner of the screen. Check with FrontlineSMS for more information on these parameters.




---

### 14. About ELMO licenses

---

The open source license for ELMO code is [Apache 2.0](#). Our code is located at [GitHub](#). ELMO can be hosted on personal servers and users can control who has access to the data.

ELMO Documentation and Training unless otherwise specified is licensed under a [Creative Commons Attribution 4.0 International License](#). 

We're working on making this available in multiple languages, if this is something you are interested in contributing to, please contact us at [info@getelmo.org](mailto:info@getelmo.org) !