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**Introduction**

Structured Data Capture (SDC) allows for the creation of coherent standardized Question/Answer sets (QAS) in Data Entry Forms (DEFs). SDC includes the content and design of QAS items in DEFs on a computer screen, the behavior of DEFs during user-DEF interactions, the transfer and display of DEF user responses, storage of DEF-captured data, the allowance to re-edit the original DEF captured data as well as create reports based on the captured DEF data.

There are three primary actors in the SDC ecosystem, each of which is a diverse kind of node in an SDC transaction network:

1. Form Managers (FMs) store the Form Design Files (FDFs) in a repository and transfers them immediately in response to requests from Form Fillers (FFs). Form Creators upload FDFs to one or multiple Form Managers.

   Form Fillers (FFs) retrieve FDFs from a Form Manager in the form of an HTML or URL from where the SDC HTML can be retrieved. FFs can also transform the XML as a DEF using programming languages, capture and validate the user-entered responses in the DEF, as well as implement rules that define the behaviors/actions of the forms in response to user interactions. Lastly, FFs can store and/or transfer the captured response data that is contained in the original FDF.

   Form Receivers (FR) receive the SDC response data in an FDF-R (an FDF that contains user responses) file from the Form Filler and process the data according to their own needs. Form Receivers are also responsible for storing the SDC data as native SDC XML and/or in another storage format.
The CAP SDC tool is a browser-based tool that allows users to request an SDC form from the CAP Form Manager repository. The Form Filler can request available SDC packages in various formats such as XML, HTML and URI from the registered/authorized Form Manager. The Form Manager will process the request and returns the requested SDC form. The Form Filler will input the data and submit the form response to the Form Receiver.

This user manual provides instructions for accessing the SDC tool from the CAP Server. It also provides an introduction to using the SDC tool, including instructions for viewing and interacting with various IHE transactions.

Comments and Contact Information
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# System Compatibility

The SDC web tool is compliant with the operating systems and browsers listed below.

<table>
<thead>
<tr>
<th>Websites and Applications</th>
<th>Microsoft Internet Explorer (10, 11)</th>
<th>Microsoft Edge</th>
<th>Mozilla Firefox</th>
<th>Google Chrome</th>
<th>Notes</th>
</tr>
</thead>
</table>
| SDC Web Tool              | ![Compatible](compatible.png)       | ![Not Recommended](not_recommended.png) | ![Compatible](compatible.png) | ![Compatible](compatible.png) | How to adjust browser settings:  
  - Enable pop-ups  
  - Enterprise mode must be turned off (for IE11 only) |

<table>
<thead>
<tr>
<th>Websites and Applications</th>
<th>Mac Safari (7.1, 8, 9)</th>
<th>Mozilla Firefox</th>
<th>Google Chrome</th>
<th>Notes</th>
</tr>
</thead>
</table>
| SDC Web Tool              | ![Compatible](compatible.png) | ![Compatible](compatible.png) | ![Compatible](compatible.png) | How to adjust browser settings:  
  - Enable pop-ups  
  - For IE 11 Only: Enterprise mode must be turned off |
Login Instructions

There are two approaches to access and navigate the “CAP SDC” web tool.

Approach 1 – Via the CAP Website

1. Click the following CAP website link http://www.cap.org/capeCC
2. Then click “Access CAP SDC Tool” on the right site. This will take you to the CAP SDC Tool Home page.

Approach 2 – Via Direct Login to the “CAP SDC” Web tool

1. Click the following CAP SDC website link. This will take you to the CAP SDC Tool Home page. https://sdt.cap.org/SDCApp/Index.aspx
**CAP SDC Home Page**

After launching SDC web tool in the browser, [https://sdt.cap.org/SDCApplndex.aspx](https://sdt.cap.org/SDCApplndex.aspx)

Users will be presented with the SDC home page.

SDC home page includes various options at the right hand side top mentioned here-

1. **Form Manger** – Lists all the available packages and Option to upload new SDC forms.
2. **Form Filler** – Request SDC forms from authorized Form Manager in the specific content format with an option to send form to more than one form receiver.
3. **Form Receiver** – Receives form and displays submitted content of the received form.
4. **Configuration** – This option supports adding new form managers and form receivers.
5. **Transaction Log** – Displays all the transactions that occurred between various actors.
Form Manager

After clicking on the “Form Manager” option at the top of the page, users will be presented with all the available forms in the Form Manager Repository.

CAP Form Manager displays all the available Packages with the following information:

- **Package Id** – Package Identifier (CAP prefixes all the packages with PKG_***)
- **Package Name** – Name of the Package
- **Form Id** - Name of the form Id (Ckey for eCC SDC forms)
- **Form Name** – Name of the SDC form
- **Default Submission Endpoints registered with the package**
- **Date Uploaded**- Displays when form was registered with the form manager
- **Validation Path** – SDC schema version

Note-SDC has gone through various phases and hence different versions are available, recommend using the latest versions, unless legacy support required.
1. On this page, authorized user can add a new SDC Package by clicking on “choose file”, which is indicated by the green arrow below.

2. The user can view a previously uploaded package in the XML (orange arrow).

3. The user can view a previously uploaded package in the HTML (red arrow) format.

4. Update a package if they choose to do so by clicking on the underlined “update” option indicated by the blue arrow.

When uploading a new file, click on “choose file” and navigate the finder window to choose the SDC compliance file that needs to be uploaded. Only SDC-compliant files can be uploaded.

If no file is chosen then the error message shown below will pop up.

**sdt.cap.org says**

Please select a file to upload.

If a file is chosen that is not SDC-compliant, then “Invalid file format” error message will pop up, indicating that the file chosen is not SDC-compliant and a different file must be chosen to upload.

If No Package ID information is entered then the error message shown below will pop up.
If No Package Name is entered then the error message shown below will pop up.

**sdt.cap.org says**

Please enter package name.

**OK**

If the user tries to upload a package without selecting a submit endpoint, this error message will appear:

**sdt.cap.org says**

Please select submit url(s) for this package

**OK**
User should fill out the remaining fields as shown in the example below of a Kidney Nephrectomy Package:

1. For the Package ID (orange arrow), start by labeling the item with “PKG_[insert title]”.
2. The Package Name (purple arrow) can be a user chosen, user friendly form label.
3. The user then selects the endpoints for the package being uploaded which designates the destination of package (red arrow). The user is allowed to choose multiple endpoints.
4. Fill out Validation Path (yellow arrow).
5. Fill out Transform Path (blue arrow) from pick list choices as shown in the image above.
6. Then, click “upload” (green arrow), which is seen at the bottom of the image above.
7. The package will be added to the “Available Packages” list under the Form Manager page (purple arrow) below.
8. A confirmation of the upload will also be displayed at the top (red arrow).
9. The package will also display the date and time of upload (green arrow):
In order to view the package in the XML format, click on the “View XML” option indicated by the orange arrow on page 8 of this User Guide. A new tab will automatically open up to display the XML format of the package:
To view the package in the HTML format, click on the “View HTML” option indicated by the red arrow, also on page 8. A new tab will automatically open up to display the HTML format of the package as shown below:

The HTML format allows the user to have some viewer options.
1. They can show the XML format above by clicking on the “Show Xml” option that is located in the top left corner and is indicated by the dark red arrow.
After clicking on “Show Xml”, user will be presented with the screen below (XML format of the package will be displayed as the HTML version).

User can hide the Xml format by clicking on the “Hide Xml” option which will appear in place of the “Show Xml” option.

2. User can click on “Toggle IDs” which is also located in the top left corner under the “Show Xml” option indicated by the dark red arrow.

After clicking on “Toggle IDs”, the page will look like this:
To view the Toggle IDs again, click “Toggle IDs” again and Ckey(identifier) will reappear.

3. To only view the sections that are required to fill out, click on “Hide not required to implement” option located under the “Toggle IDs” option which is indicated by the dark red arrow below.

After clicking on “Hide not required to implement”, the window should look something like this:
Essentially, some items will disappear from the screen, like the “Clinical” section, because this section was not required for fill in. To see those items again, click on the “Show not required to implement” option which appears in place of “Hide not required to implement”.

1. To update a package, click on the “update” option shown below:

Use will be presented with the below screen with the option to modify the following fields:

- XML
- Package Id and Package Name
- Submit Endpoints etc.
2. User clicks “save” button to updates the information in the CAP-SDC System.

3. To delete a Package from the “Available Packages” section, click the “x” button that is placed to the far right of each row:

Package will be deleted from the CAP-SDC System.

Form Filler

1. Click on the “Form Filler” option to the right of the “Form Manager” option.
The screen will look something like this:

Here, the user can request to submit a specific form from one site to one or multiple sites.

1. The user must indicate the company from which the form will be coming from – Form Manager (blue arrow).
2. Then, the user must indicate the content format which is shown by the red arrow.
3. After clicking on a content format, click on “Get Available Packages” to choose the specific package that needs to be sent to the form receivers.
4. The user should then choose the form receivers, which is indicated by the green arrow.
5.Lastly, in order to submit the request for the retrieval of the forms from the specific company, click on “Retrieve”, which is indicated by the orange arrow.
6. After clicking “Retrieve”, the user must unlock pop-ups from this software. Click “Always allow pop-ups from…” and then click “Done”.

![Pop-up_blocked.png](image)
For an XML format, the user may enter items as shown below:

The screen will appear like this after clicking “Retrieve”:
The filler can then fill out the form accordingly.

1. For the XML format, if the user chooses “PKG_Adrenal+Demog”, then the user has the option of pasting in Prepop Data, which allows for the easy insertion of demographic data:

Form Filler

Select a form manager

- CAP  - JBS  - mTuitive  - Local

Select content format

- XML  - HTML  - URL

Get Available Packages

Select a package:

- PKG_Adrenal
- PKG_Adrenal+Demog
- PKG_AmpullaofVater
- PKG_ANUSBx
- PKG_AnusResection
- PKG_Appendix
- PKG_Bone_Marrow
- PKG_Brain
- PKG_Breast Invasive MEE
- PKG_Breast VEK
- PKG_Breast-JLW
- PKG_Breast_Bmk

1
2. Next, click on “Prepop Data” and paste in **CCDA data**, the pasted prepop data will be parsed and mapped out by the Form Manager to display in the form properly.

3. Click “Retrieve” (Red arrow). The screen should then look like this:

The arrow indicates the Demographics section of the data.
4. Click the “+” button that is right next to the “Demographics” section, green arrow above. The screen will then look like this:
The Prepop Data functionality allows the user to populate patient available data a lot faster and more efficiently than re-entering patient data.

All of that the information indicated by the red arrows above was parsed by form manager automatically after providing Prepop Data with the form request.

1. For an HTML form request, user will select “HTML” as content format.
2. Select specific form manager.
3. Select the package name.
4. In the case of “HTML” option, the Form Manager makes the decision regarding the Form Receiver using destination end points and selected Form Receiver by Form-Filler will be ignored.
5. User will click “retrieve” button to receive requested form as shown below:

The Form-Filler can then fill out the form data and submit the form to pre-selected form receivers.

1. For a URL form request, user will select “URL” as content format.
2. Select specific form manager.
3. Select the package name.
4. In case of “URL” option, form manager will use pre-defined destination end points so that the submitted form will be received by pre-selected form receiver.

This option launches the URL and operation gets handled by form manager system and no additional configuration or development is required at form-filler side.
5. Click “retrieve”. The screen will look like this:
The popup message displayed above explains that for URLs, the Form Manager chooses the receivers. Thus, some of the receivers chosen by the user may be ignored.

6. Click “OK”. The screen will then display a URL:


Clicking on the URL will display the HTML form on the screen:

The Filler can then fill out the form accordingly.

1. The bottom of the form has a “submit” button (purple arrow).
2. The green arrow is the indication of where this form will be going to:
After filling the form out, and clicking “submit”. The screen will then notify the user if there are required sections that have not been filled out yet.

3. Click “OK” (orange arrow):

The screen will then ask if the user would still like to continue and submit the form.

4. Click “OK” (blue arrow) to submit.

5. Click “Cancel” (purple arrow) to return to the form and fill out the required sections.
After successfully submitting the form, the screen will look like this:

6. The section that is highlighted by the red circle shows that the form has been submitted successfully.
Form Receiver

The Form Receiver page can be viewed by clicking on “Form Receiver” option, located adjacent to the “Form Filler” option. After clicking “Form Receiver”, the screen below will be displayed:

The Form Receiver page displays all of the forms that have been received by date.
1. The Form Receiver page also allows the user to view the forms in an XML format (blue arrow)
2. The Form Receiver page allows the user to view an HTML format (red arrow). Both options are located to the right of each form.
3. Paging can also be used to see previous or later records (green arrow).

After clicking on “XML”, this screen will be shown:
1. User will be presented with the submitted data in the XML format shown (teal arrow). The user can also simply highlight the text and copy that information wherever the user deems necessary.
2. User can click “Close” button to go back to the Form Receiver page.

1. After clicking on “HTML” link (red arrow), user will be presented as shown below:
2. As shown above, the user can view the submitted data by Form-Filler in an HTML format (teal arrows). User can also use “Toggle IDs” and “Show not required to implement” options to see ids and optional elements.

Configuration

The Configuration option can be used to register a new Form Manager or Form Receiver to the list of managers and receivers. This option will also be used to update or Remove an existing Form Manager or Form Receiver.

The screen below will be displayed when user clicks on the “Configuration” option:

1. The user can then add in the information required to add a Form Manager – teal arrow.
2. To add a Form Receiver, the user must fill in the required information that is indicated by the orange arrow. After submitting the necessary information, the user must click “add”. This information will then be added to the list of Form Managers or Form Receivers in the table above.
3. To add a Form Manager, fill out the Form Manager name
4. Fill out Form List REST API Endpoints
5. Fill out Retrieve Endpoints information
6. Click the “add” button.
Form Filler Configuration

After clicking “add”, the new Form Manager will be added.

7. The user can then edit the Form Manager by clicking the “edit” option as shown below:

8. To update after entering in the new material, click “update” as shows below (orange arrow).
9. To cancel the edits made, click “Cancel” and the Form Manager will go back to the way it was in the table:
10. To add a Form Receiver, fill out the three sections in the chart and click “add”:

After clicking “add”, the new Form Receiver will be added in the system.

11. The use can then edit the Form Receiver by clicking “edit” option:
12. To update after entering in the new material, click “update” as shows below (orange arrow).

13. To cancel the edits made, click “Cancel” and the Form Receiver will go back to the way it was in the table:

14. To delete a certain Form Manager or Form Receiver, click the “x” button that is located to the right of each row:
The server will then prompt the user to confirm their intention to delete the form.

15. Click “OK” to delete.
16. Click “Cancel” to keep the form.

Transaction Log

The Transaction Log is where the user can view all requests/submissions of forms as well as all of their details.

1. In order to delete these transactions, click on the “Delete Transactions” option at the top right corner of the table:
2. To view the Log Message, which entails the Transaction ID, the Transaction Type as well as the code for the form, click on “View Log Message” which is pointed out by the red arrow below:

After clicking on “View Log Message”, a new tab will open up that looks like this:
3. Here, the user can scroll down and see the rest of the code (red arrow).

4. Enter base64 string below to decode (orange arrow).

5. Click on “Decode Base64” (purple arrow).

6. Download the code (green arrow).
7. Specifically, with an HTML form (teal arrow) below, after clicking on “View Log Message”, a screen will be displayed with binary data.

8. This binary data (red arrow) below allows the user to successfully click on “Decode Base64” (purple arrow) above and view the decoded data.
After clicking “Decode Base 64”, users will see the following:

9. Now, the user can easily read the binary data from above in the decoded message indicated by the **green arrow**.

10. The user can then download this data by clicking on the “Download” option at the bottom (**blue arrow**).

11. The new HTML file will be downloaded at the default location based on system/user configuration. After clicking on the download (**orange arrow**), the user will be able to view the HTML version of the file.
The HTML Download appears as follows:

```
<table>
<thead>
<tr>
<th>Long Cancer Screening Template</th>
</tr>
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<tbody>
<tr>
<td>Applicable: LDCT Lung Cancer Screening Thyroid</td>
</tr>
<tr>
<td>Revision: 3.00</td>
</tr>
<tr>
<td>Effective Date: 2019-06-01</td>
</tr>
<tr>
<td>Document Number: C1054.00.02</td>
</tr>
<tr>
<td>11th Revision: 2019-06-01</td>
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<tr>
<td>Document Title: LDCT Lung Cancer Screening Thyroid</td>
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**CLINICAL INFORMATION**

<table>
<thead>
<tr>
<th>Field</th>
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<tr>
<td>Age</td>
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<tr>
<td>Gender</td>
<td>Male</td>
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**COMPARISON STUDIES**

<table>
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<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Previous Study</td>
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</tbody>
</table>

**IMAGING PROCEDURE DESCRIPTION**

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<thead>
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<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Image Quality</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Procedure Type</td>
<td>CT Lung, Non-Contrast</td>
</tr>
<tr>
<td>Measurements Obtained</td>
<td>11th CT Lung, Non-Contrast Series</td>
</tr>
</tbody>
</table>

**FINDINGS**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Lesions Present</td>
<td>2</td>
</tr>
<tr>
<td>Lesion Location</td>
<td>Upper Lobe, Right Lower Lobe</td>
</tr>
<tr>
<td>Lesion Size</td>
<td>1cm, 0.8cm</td>
</tr>
</tbody>
</table>
```