

# Formatting the JSON File

We detailed the process of formatting a JSON file to create a customized questionnaire form for the RTMIS system. The RTMIS system leverages the [Akvo Form Service](#) for generating initial JSON form structures. We explored the basic structure and components of the form JSON, as documented in the [Akvo React Form's README](#).

Additionally, we introduced specific customizations required for RTMIS, including the addition of **submission\_types** at the form level and **three new parameters** at the question level: `default_value`, `disabled`, and `hidden`. These custom parameters are defined as objects based on the `submission_type`, which is specified as an enumeration.

We provided a detailed example of the JSON structure incorporating these customizations and outlined the manual steps needed to add these custom parameters after generating the initial JSON form. By following this process, users can effectively format their JSON files to meet the requirements of RTMIS customized questionnaire forms.

## Overview

The RTMIS system uses a JSON file to build a questionnaire form. This JSON file can be generated using an internal library called **Akvo Form Service**. For more information and to access the editor, visit the following link: <https://form-service.akvotest.org/forms>

In general, all components and formats in the form JSON are documented in the Akvo React Form's README file. You can find the documentation here: <https://github.com/akvo/akvo-react-form/blob/main/README.md>

However, for this project, we have added customizations at the form-level definition and at the question level. These customizations include the addition of `submission_types` at the form level, and three additional parameters at the question level: ``default_value``, ``disabled``, and ``hidden``. These parameters are defined as objects and depend on the ``submission_type``. The ``submission_type`` itself is an enum value and is defined as a constant. You can view the definition here:

[https://github.com/akvo/rtmis/blob/main/backend/api/v1/v1\\_forms/constants.py#L37-L48](https://github.com/akvo/rtmis/blob/main/backend/api/v1/v1_forms/constants.py#L37-L48).

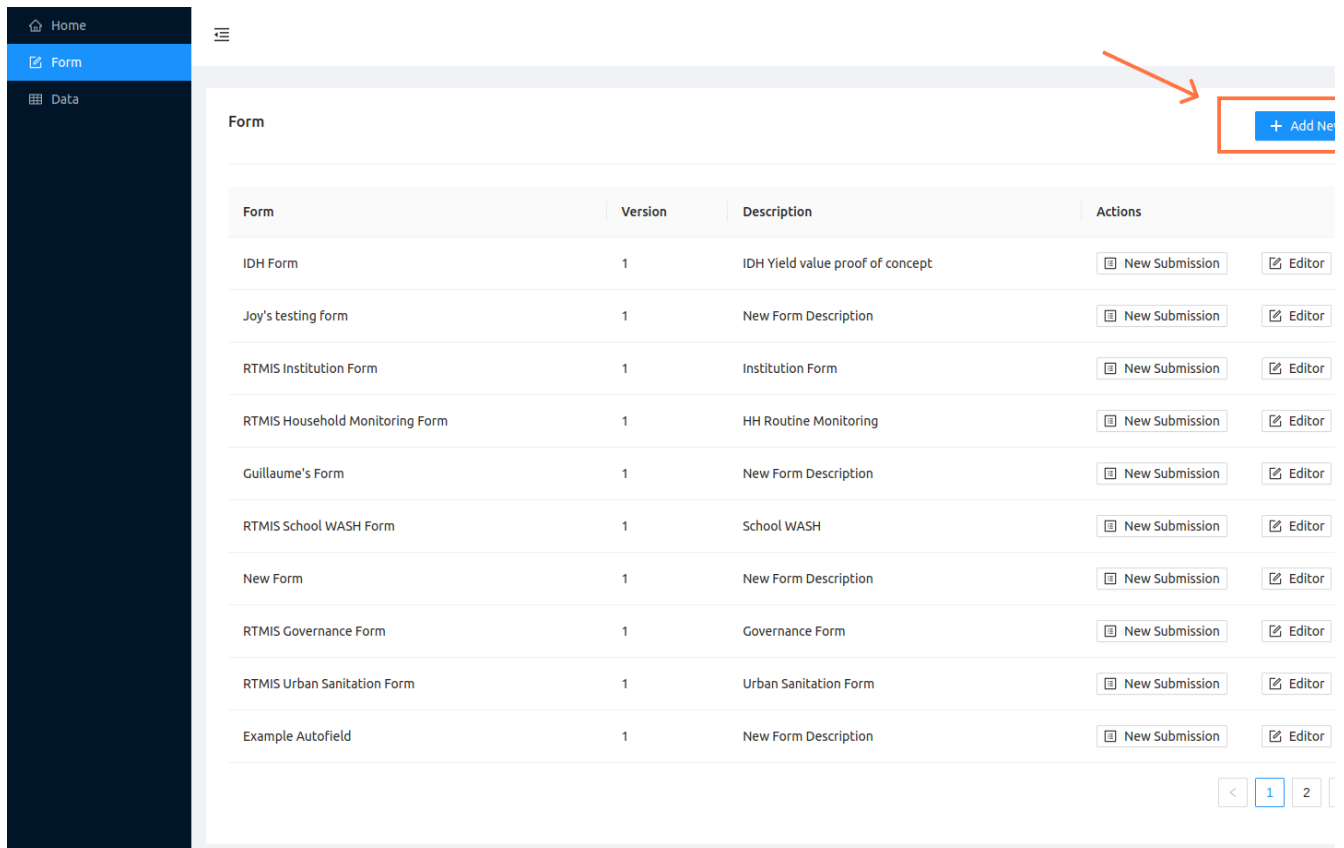
All the customizations will be added manually after the JSON form is generated with the **Akvo Form Service**.

# Generate the JSON Form

## Create a New Form

**Go to Akvo Form Service:** Open your browser and navigate to <https://form-service.akvotest.org/>

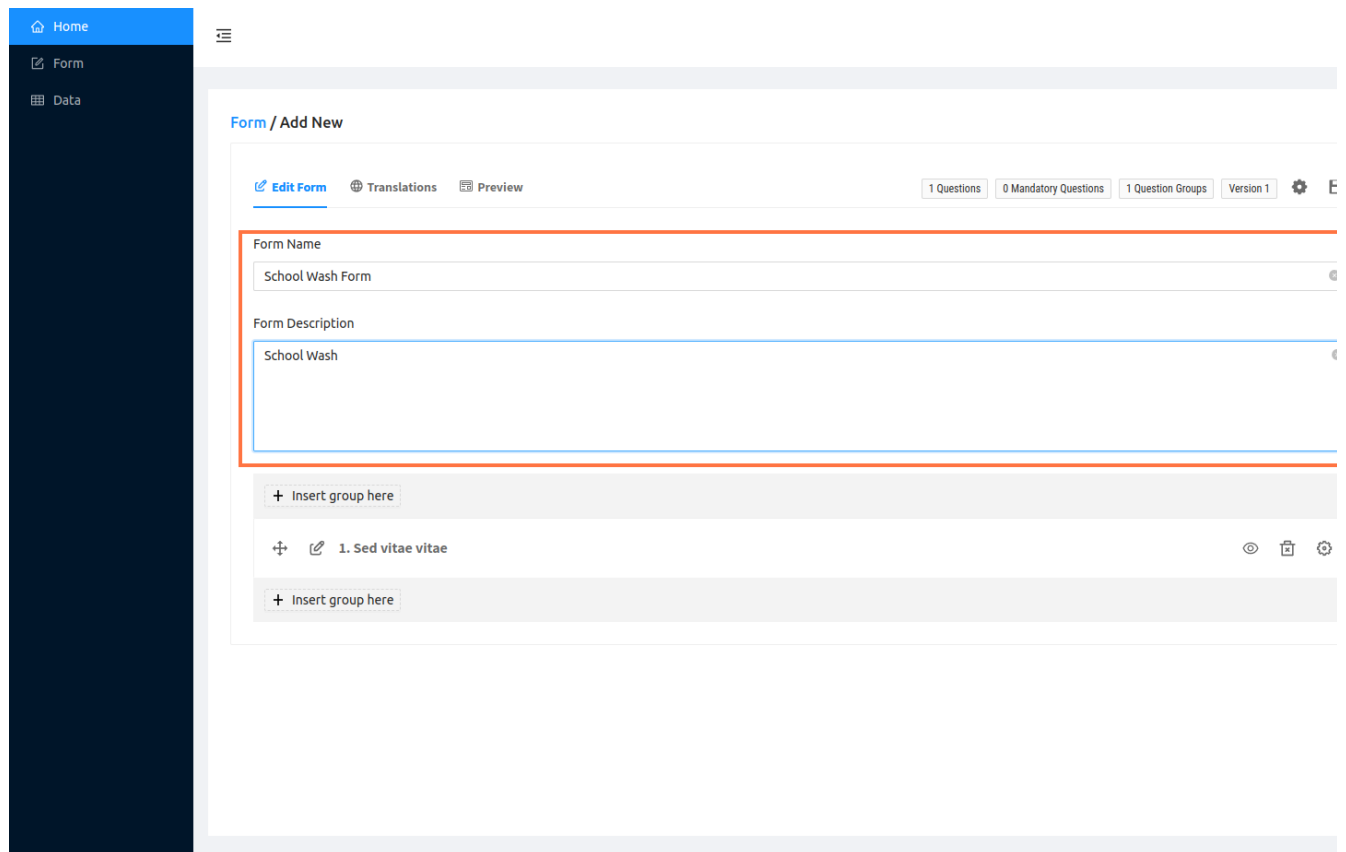
**Access the Forms Menu:** Click on the "Forms" menu and Click the "New" button to create a new form.



The screenshot shows the Akvo Form Service interface. On the left is a dark sidebar with a menu containing 'Home', 'Form' (highlighted), and 'Data'. The main content area is titled 'Form' and contains a table of existing forms. In the top right corner of the main area, there is a blue button with a plus sign and the text '+ Add New', which is highlighted by a red rectangle and pointed to by a red arrow. The table has four columns: 'Form', 'Version', 'Description', and 'Actions'. It lists ten forms, each with a 'New Submission' and 'Editor' button in the 'Actions' column. At the bottom right of the table, there are pagination controls showing '< 1 2 >'. The 'Form' column contains names like 'IDH Form', 'Joy's testing form', 'RTMIS Institution Form', 'RTMIS Household Monitoring Form', 'Guillaume's Form', 'RTMIS School WASH Form', 'New Form', 'RTMIS Governance Form', 'RTMIS Urban Sanitation Form', and 'Example Autofield'. The 'Version' column shows '1' for all forms. The 'Description' column contains various descriptions like 'IDH Yield value proof of concept', 'New Form Description', 'Institution Form', 'HH Routine Monitoring', 'School WASH', 'Governance Form', 'Urban Sanitation Form', and 'New Form Description'.

Form	Version	Description	Actions
IDH Form	1	IDH Yield value proof of concept	<button>New Submission</button> <button>Editor</button>
Joy's testing form	1	New Form Description	<button>New Submission</button> <button>Editor</button>
RTMIS Institution Form	1	Institution Form	<button>New Submission</button> <button>Editor</button>
RTMIS Household Monitoring Form	1	HH Routine Monitoring	<button>New Submission</button> <button>Editor</button>
Guillaume's Form	1	New Form Description	<button>New Submission</button> <button>Editor</button>
RTMIS School WASH Form	1	School WASH	<button>New Submission</button> <button>Editor</button>
New Form	1	New Form Description	<button>New Submission</button> <button>Editor</button>
RTMIS Governance Form	1	Governance Form	<button>New Submission</button> <button>Editor</button>
RTMIS Urban Sanitation Form	1	Urban Sanitation Form	<button>New Submission</button> <button>Editor</button>
Example Autofield	1	New Form Description	<button>New Submission</button> <button>Editor</button>

**Update Title and Description:** Modify the default title and description as needed.



Home  
Form  
Data

Form / Add New

Edit Form Translations Preview

1 Questions 0 Mandatory Questions 1 Question Groups Version 1

Form Name  
School Wash Form

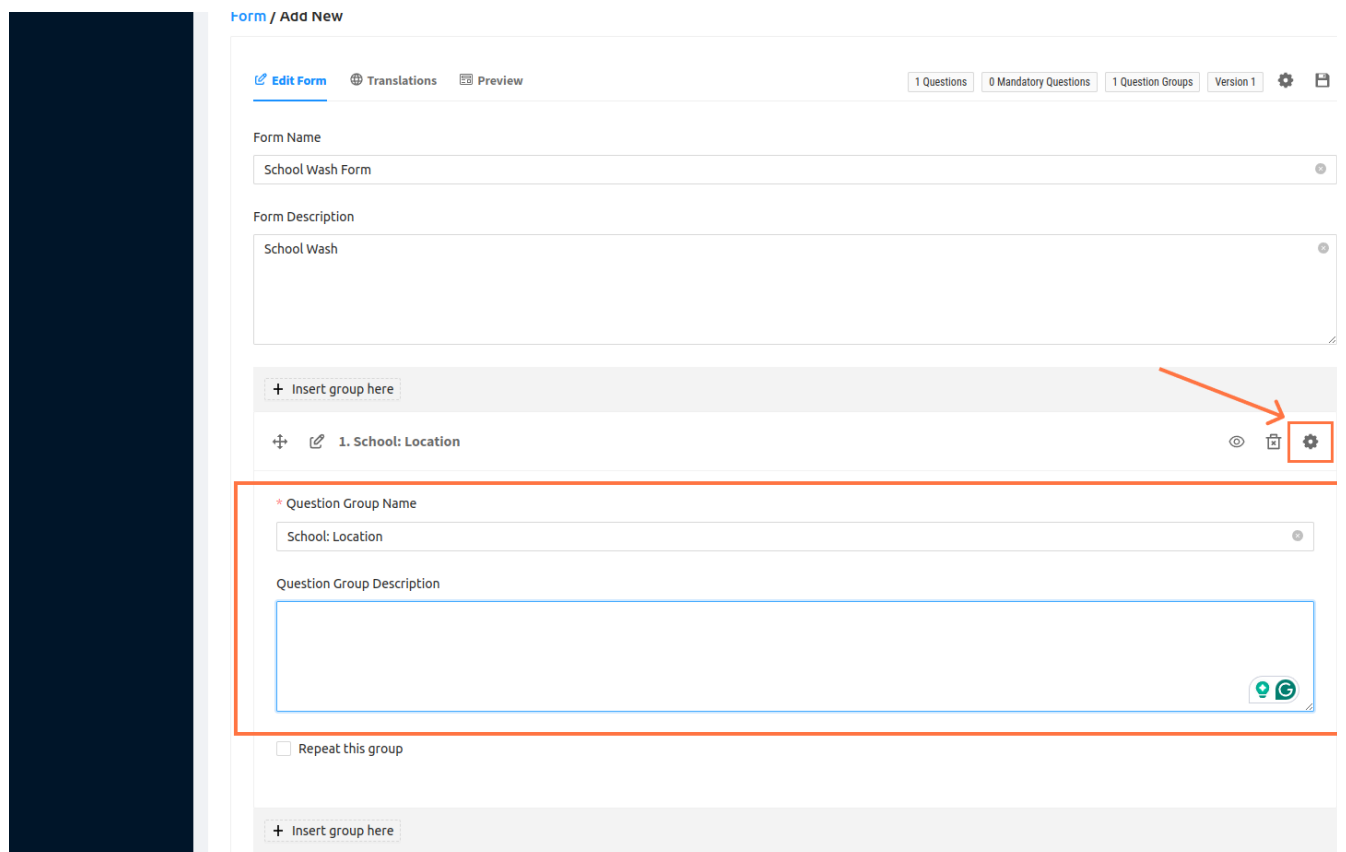
Form Description  
School Wash

+ Insert group here

1. Sed vitae vitae

+ Insert group here

**Edit Default Group Question:** Click the gear icon on the right side to update the default group question. Once done, click the gear icon again to exit edit mode.



Form / Add New

Edit Form Translations Preview

1 Questions 0 Mandatory Questions 1 Question Groups Version 1

Form Name  
School Wash Form

Form Description  
School Wash

+ Insert group here

1. School: Location

+ Insert group here

\* Question Group Name  
School: Location

Question Group Description

☐ Repeat this group

+ Insert group here

**Edit questions:** Click the pencil icon on the group question to edit or add questions.

The screenshot shows a web application interface for creating a new form. On the left is a dark blue sidebar with navigation links: 'Home' (highlighted), 'Form', and 'Data'. The main content area is titled 'Form / Add New'. At the top of this area are tabs for 'Edit Form' (active), 'Translations', and 'Preview'. To the right of these tabs are statistics: '1 Questions', '0 Mandatory Questions', '1 Question Groups', and 'Version 1', along with a settings gear icon and an 'E' icon. Below the tabs are two text input fields: 'Form Name' containing 'School Wash Form' and 'Form Description' containing 'School Wash'. Below these fields is a question group section. It starts with a '+ Insert group here' button. Below that is a question entry '1. School: Location' which is highlighted with a red box. To the left of this entry is a small icon with a pencil and a plus sign. To the right are icons for visibility, deletion, and settings. Below the question entry is another '+ Insert group here' button.

**Edit questions:** For the default question, click the pencil icon and update the question type (e.g., option), fill in all necessary options, and click the pencil icon again to collapse the question.

The image consists of two screenshots of a form editor interface, showing the process of adding a new question.

**Top Screenshot:** The interface shows the 'Edit Form' tab with a list of questions. The first question is '1. School: Location'. Below it is a question '1.1. New school registration or monitoring update?'. The 'Setting' tab is selected. The 'Question Name' is 'New school registration or monitoring update?' and the 'Question ID' is '1718589962085'. The 'Question Type' dropdown menu is open, showing options: 'input', 'number', 'cascade', 'geo', 'text', 'date', 'option', and 'multiple option'. The 'option' type is selected and highlighted with a red box. Below the dropdown, there are checkboxes for 'Required' and 'Data point name'.

**Bottom Screenshot:** The interface shows the 'More Option Question Setting' section. The 'Question Type' is set to 'option'. The 'Variable Name' field is empty. The 'Question Tooltip' field is empty. Below these fields, there are checkboxes for 'Required' and 'Data point name'. The 'More Option Question Setting' section is expanded, showing the 'Allow Other' checkbox. Below this, there are two rows of options. The first row has 'new' and 'New' as options, with a '#' symbol and four circular icons (plus, minus, up, down). The second row has 'update' and 'Update' as options, with a '#' symbol and four circular icons. The 'Stats Setting' section is also visible, with a field for 'Add Stats Endpoint Here'.

**Add Questions:** To add a new question, click "Add New Question" at the bottom to insert a new question **after the current one**, or click "Add New Question" at the top to insert before.

Form / Add New

Edit Form Translations Preview

2 Questions 0 Mandatory Questions 2 Question Groups Version 1

+ Insert group here

+ 1. School Wash Form

+ Insert group here

+ 2. School: Location

+ Add new question

+ 2.1. New school registration or monitoring update?

+ Add new question

+ Insert group here

**Preview and Save:** Go to the "Preview" tab to review and evaluate the form settings. If everything is correct, click the "Save" button to store the current version of the form.

Form / Add New

Edit Form Translations Preview

1 Questions 0 Mandatory Questions 1 Question Groups Version 1

School Wash Form

English Submit

FORM OVERVIEW

School: Location

1. New school registration or monitoring update?

☐ New

☐ Update

Previous Next

## Download Akvo Form Service to RTMIS

- **Edit and Retrieve Form ID and Name**
  - On the form list, click the "Edit" button for the form you created (e.g., School Wash Form).

Form	Version	Description	Actions
IDH Form	1	IDH Yield value proof of concept	<a href="#">New Submission</a> <a href="#">Edit</a>
Joy's testing form	1	New Form Description	<a href="#">New Submission</a> <a href="#">Edit</a>
RTMIS Institution Form	1	Institution Form	<a href="#">New Submission</a> <a href="#">Edit</a>
RTMIS Household Monitoring Form	1	HH Routine Monitoring	<a href="#">New Submission</a> <a href="#">Edit</a>
Guillaume's Form	1	New Form Description	<a href="#">New Submission</a> <a href="#">Edit</a>
<b>RTMIS School WASH Form</b>	1	School WASH	<a href="#">New Submission</a> <a href="#">Edit</a>
New Form	1	New Form Description	<a href="#">New Submission</a> <a href="#">Edit</a>
RTMIS Governance Form	1	Governance Form	<a href="#">New Submission</a> <a href="#">Edit</a>
RTMIS Urban Sanitation Form	1	Urban Sanitation Form	<a href="#">New Submission</a> <a href="#">Edit</a>
Example Autofield	1	New Form Description	<a href="#">New Submission</a> <a href="#">Edit</a>

- Go to the "**Preview**" tab.
- Copy the ID from the last segment of the URL and the form name.

form-service.akvotest.org/forms/edit/1701757876668

Form / Edit / 1701757876668

RTMIS School WASH Form

FORM OVERVIEW

- School WASH: Data
- School: Location
- School Water Supply
- School Sanitation
- School Hygiene
- Menstrual Health

School WASH: Data

1. New school registration or monitoring update?

☐ New

☐ Update

2. Geolocation of school

Use My Location

Latitude

Longitude

- Paste the ID and name into the designated file.

backend/api/v1/v1\_forms/management/commands/download\_forms\_from\_afs.py#L8

C1-L13C2

```
...
forms = [
    {
        "id": 1701757876668,
        "name": "RTMIS School WASH Form",
    },
]
```

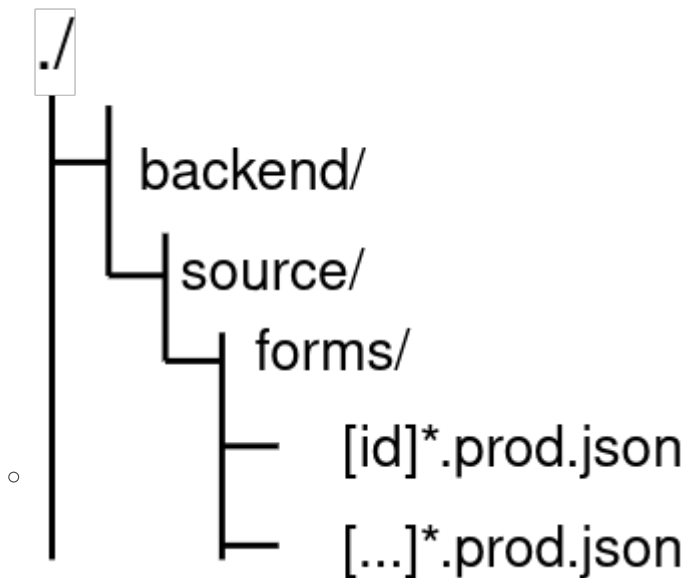
```
]
...
```

- **Download the Form**

- Run the command to download the form from Akvo Form Service into the RTMIS platform.

```
./dc-mobile.sh exec backend python manage.py download_forms_from_afs
```

- Once the download is complete, navigate to the directory ``backend/source/forms/``.
- Locate the form by its ID with the suffix ``*.prod.json`` and ``*.json`` file extension (e.g., ``1701757876668.prod.json``).



## Customization Details

### Form Level Customization

At the form level, we introduce a new parameter: ``submission_types``. This parameter specifies the different types of submissions allowed for the form. The ``submission_types`` parameter is defined as an enumeration, providing a set of predefined submission types that the form can handle.

id	Submission Type	Description
1	registration	Utilized through the Registration form
2	monitoring	Utilized through the Monitoring form
3	verification	Utilized through the Grade Claim form



4	certification	Utilized through the Grade Certification form
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## Question Level Customization

At the question level, we introduce three new parameters:

1. **default\_value**: Specifies the default value for the question. This value will be pre-filled when the form is loaded.
2. **disabled**: A boolean parameter that indicates whether the question should be disabled (i.e., not editable) when the form is displayed.
3. **hidden**: A boolean parameter that indicates whether the question should be hidden from view when the form is displayed.

These parameters are defined as objects and their values depend on the **submission\_type**.

## Example JSON Structure

Here is an example structure of the JSON file with the added customizations:

```
{
  "id": 123456,
  "form": "School WASH Form",
  "description": "School WASH",
  "defaultLanguage": "en",
  "languages": ["en"],
  "version": 1,
  "type": 1,
  "translations": null,
  "submission_types": [
    "registration",
    "monitoring",
    "verification",
    "certification"
  ],
  "question_groups": [
    {
      "id": 1699354006534,
      "order": 1,
```

```
"name": "school_location_group_question",
"label": "School: Location",
"repeatable": false,
"translations": null,
"questions": [
  {
    "id": 1699354006535,
    "order": 1,
    "name": "new_school_registration_monitoring_update",
    "label": "New school registration or monitoring update?",
    "short_label": null,
    "type": "option",
    "tooltip": {
      "text": "Entry of school data in RTMIS (first time) or update of monitoring data (existing school)"
    },
    "required": true,
    "meta": false,
    "options": [
      {
        "order": 1,
        "label": "New",
        "value": "new"
      },
      {
        "order": 2,
        "label": "Update",
        "value": "update"
      },
      {
        "order": 3,
        "label": "Verification",
        "value": "verification"
      },
      {
        "order": 4,
        "label": "Certification",
        "value": "certification"
      }
    ],
    "default_value": {
```

```
"submission_type": {
  "monitoring": "update",
  "registration": "new",
  "verification": "verification",
  "certification": "certification"
}
},
{
  "id": 1699951210638,
  "order": 2,
  "name": "school_location",
  "label": "What is the location of the school?",
  "short_label": null,
  "type": "administration",
  "tooltip": {
    "text": "This question contains a list of possible school locations, starting with the government area or
district, down to the community."
  },
  "required": true,
  "meta": true,
  "disabled": {
    "submission_type": ["monitoring", "verification", "certification"]
  }
},
{
  "id": 1716283778,
  "order": 33,
  "name": "schools_achieved_required_outcomes",
  "label": "Have 100% of school achieved the required outcomes for this grade?",
  "short_label": null,
  "type": "option",
  "required": true,
  "meta": false,
  "options": [
    {
      "order": 1,
      "label": "Yes",
      "value": "yes",
      "color": "green"
```

```
    },
    {
      "order": 2,
      "label": "No",
      "value": "no",
      "color": "red"
    }
  ],
  "hidden": {
    "submission_type": ["registration", "monitoring", "certification"]
  }
}
]
```

By following these steps, you can successfully format the JSON file to work with RTMIS as a customized questionnaire form.

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