
Swiss Re Magnum Integration

FIRELIGHT BASE

FireLight®

Platform

SWISS RE MAGNUM INTEGRATION

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Insurance Technologies, LLC

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Insurance Technologies, LLC

Two South Cascade Avenue
Colorado Springs, CO 80903
USA

Phone: 719.442.6400

FAX: 719.442.0600

Internet E-Mail: info@insurancetechnologies.com

Website: <http://www.insurancetechnologies.com>

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iConnect 224601 Design Approach - Swiss Re Magnum Integration

Project Overview

Enhance Firelight to leverage the Magnum Pure Engine APIs within a FireLight application to gather underwriting data for life applications.

The Magnum Pure Engine APIs will be embedded in FireLight and shown in a dialog when opened by clicking on a Custom Action button added to a wizard page in the application.

When Magnum is opened, data will be passed in the bootstrap process from the FireLight application to set up the correct interview questions in Magnum.

When Magnum is closed, the data will be saved and passed to FireLight, which can be mapped to the appropriate PDF form fields so the data is submitted with the application.

FireLight will query the Magnum API for a status. Once the data is complete in the Magnum interview the status will be set to complete. FireLight will leverage the status to recognize when the application can be set to 100% complete when data entry is finished. After the Magnum interview is complete, it can be reopened and updated prior to application submittal.

FireLight will also retrieve and store the case level underwriting decision when the interview is complete. Additionally, the full underwriting decision tree will be stored in JSON format and made available to the provider for added customizations.

Note that the Magnum setup is handled by the carrier, not the distributor. When a distributor runs a carrier product activity, the carrier custom action button, custom lists and provider are called after the relevant distributor components.

Impacts:

- Admin, Custom Action Properties: New option named External Source.
- Admin, Custom Action Properties: External Source Type with option Magnum to tie Magnum API to the custom action button.
- Admin, Custom Action Properties: New Outbound Mapping List and Inbound Mapping List options with Custom List options to allow selection in mapping list to pass to Magnum and receive from Magnum.
- Admin, Custom Action Properties: New External Source Parameter to enter rulebase name.
- Admin, Organization Settings, 3rd Party Service Config: New Magnum Service Type with ApiKey, and Site URL.

- App: Dialog appears when the Magnum Custom Action button is clicked with the Magnum interview underwriting questions.
- App: A Magnum Case ID is created the first time the Magnum Custom Action button is clicked in an application.
- App: The Magnum Case ID is never replaced on an application where the Case ID has already been generated.
- App: The Case ID is attached to the application and passed when the application is submitted to the backend admin system at the carrier.
- App: Magnum dialog can be opened and data updated anytime after it is completed prior to the FireLight application submittal.
- App: Data entered in Magnum is saved when a user clicks the dialog Close button or clicks off the dialog and it closes.
- App: Outbound Mapping List data is passed to Magnum from FireLight when Magnum is opened.
- App: Updated Outbound Mapping List data is passed to Magnum from FireLight whenever Magnum is opened.
- App: Inbound Mapping List data is passed to FireLight from Magnum when Magnum dialog is closed.
- App: Inbound Mapping List Magnum data is mapped to applicable FireLight form field data items.
- App: Underwriting case decision is retrieved from Magnum and added to a data item in FireLight when the interview is finished.
- App: All Magnum data is cleared in a copied activity.
- App: Entries appear in the audit each time the Web service is called to open and close the dialog.
- App: A single record appears in the service request table containing the case ID and the JSON returned from Magnum. A single record appears in the service request table containing the full case decision JSON returned from the Magnum decision service.
- App: An error message appears if the Magnum dialog attempts to open and the Web service unavailable or an error occurs in Magnum.

1 Add a new Custom Action named External Source for wizard only

Add a new Custom Action named External Source to the Wizard Designer only. When selected, another dropdown appears named External Source Type with Magnum as an option in the list. This will be used to identify the button in the wizard, which will be used to launch Magnum.

Custom Action Properties

☐ Place Field on a New Row

Name

Text

Width

Mobile Width

Class Name

Help Text

Data Group

Custom Action

External Source Type

Outbound Mapping List

Inbound Mapping List

External Source Parameter

CANCEL
OK

Acceptance Criteria

- New Custom Action added to list named External Source.
- New External Source Type appears when Custom Action is External Source.
- Magnum appears in the External Source Type dropdown list.
- The External Source option appears in the Wizard Designer and not the Forms Designer.

2 Add Outbound Mapping List text field to Custom Action properties

When Custom Action is set to External Source, display a new field named Outbound Mapping List to select the name of the Custom List, which contains the outbound mapping list being passed from FireLight to Magnum. The Outbound Mapping List will display a list of the Custom Lists defined in Organization Settings\Custom Lists. Note that the outbound list is optional; the provider can supply it.

Custom Action Properties

☐ Place Field on a New Row

Name

Open_Magnum_Form

Text

Magnum Underwriting Interview

Width

4

Mobile Width

Enter a Value

Class Name

Enter a Value

Help Text

Enter a Value

Data Group

None

Custom Action

External Source

External Source Type

Magnum

Outbound Mapping List

Magnum Outbound

Inbound Mapping List

Magnum Inbound

External Source Parameter

Magnum Rulebase

CANCEL

OK

Acceptance Criteria

- When Custom Action External Source is selected, a new dropdown field named Outbound Mapping List appears.
- The dropdown list contains the options from the Custom Lists.

3 Add Inbound Mapping List dropdown field to Custom Action properties

When Custom Action is set to External Source, display a new field named Inbound Mapping List to select the name of the Custom List, which contains the inbound mapping list being passed from Magnum to FireLight. The Inbound Mapping List will display a list of the Custom Lists defined in Organization Settings\Custom Lists.

Custom Action Properties

☐ Place Field on a New Row

Name

Open_Magnum_Form

Text

Magnum Underwriting Interview

Width

4

Mobile Width

Enter a Value

Class Name

Enter a Value

Help Text

Enter a Value

Data Group

None

Custom Action

External Source

External Source Type

Magnum

Outbound Mapping List

Magnum Outbound

Inbound Mapping List

Magnum Inbound

External Source Parameter

Magnum Rulebase

CANCEL

OK

Acceptance Criteria

- When Custom Action External Source is selected, a new dropdown field named Inbound Mapping List appears.
- The dropdown list contains the options from the Custom Lists.

4 Add External Source Parameter text field to Custom Action properties

When Custom Action is set to External Source, display a new text field named External Source Parameter to specify the name of the Magnum rulebase.

Custom Action Properties

☐ Place Field on a New Row

Name

Open_Magnum_Form

Text

Magnum Underwriting Interview

Width

4

Mobile Width

Enter a Value

Class Name

Enter a Value

Help Text

Enter a Value

Data Group

None

Custom Action

External Source

External Source Type

Magnum

Outbound Mapping List

Magnum Outbound

Inbound Mapping List

Magnum Inbound

External Source Parameter

Magnum Rulebase

CANCEL

OK

Acceptance Criteria

- When Custom Action External Source is selected, a new text field named External Source Parameter appears.
- Text can be entered in the External Source Parameter field.
- In the case of Magnum, the rulebase name will be entered into the External Source Parameter field.

5 Add Magnum Third Party Service Config Types to Organization Settings

Add new Third Party Service Config Types to Organization Settings located on the Admin tab for the ApiKey and PrimaryServer to use when contacting Magnum via the APIs.

Service Type = Magnum

Config Name = ApiKey

Config Value = ApiKey (key will not be displayed, it will be protected)

Service Type = Magnum

Config Name = PrimaryServer

Config Value = https://mydomain.com/magnum/v1

The screenshot shows the FireLight Administration Console with the 'Admin' tab selected. In the 'Organization' settings section, the 'Third Party Service Config*' link is highlighted with a red box. Below this, a modal window titled 'Third Party Service Configuration' is open. The modal contains an 'Add New' link and a form with three fields: 'Config Name', 'Config Value', and 'Service Type'. The 'Service Type' dropdown is set to 'Magnum'. Below the form is a table with columns: 'Service Type', 'Config Name', 'Config Value', 'Update', and 'Delete'.

Service Type	Config Name	Config Value	Update	Delete
--------------	-------------	--------------	--------	--------

Acceptance Criteria

- New Third Party Service Config type added to Organization Settings\Admin for Magnum.
- When Third Party Service Config is edited, Magnum ApiKey and PrimaryServer can be added.
- Config Value for the ApiKey is protected and not shown.
- Magnum appears in the list in alphabetical order.

6 Add new interface and class for status checks and updates to Magnum API service

Create a new interface and class to manage the Magnum communication. The interface will be generic so it can be reused for future integrations.

Acceptance Criteria

- Ensure the external source code is generic and reusable.
- Add common methods to handle creation, updating, and status of cases.

7 Create a new Magnum case

When the custom action button is clicked to launch Magnum, a new case will be created if one does not exist. Certain data items will be mapped and passed to Magnum as part of the bootstrapping process so Magnum knows which fields to display in the underwriting interview.

The ID of the created case will be stored as a data item linked to the custom action button named {custom_action_button_id}_MAGNUM_CASE_ID.

The rulebase used to create the Magnum case also needs to be stored in data item {custom_action_button_id}_MAGNUM_RULEBASE_NAME.

Trigger an application save when a new Magnum case is created and put into a data item.

Pass specified data during the case creation so Magnum knows what questions/information to show.

[Sample API call:

POST https://mydomain.com/magnum/v1/cases

```
{
  "bootstrapType": "HOST_APP",
  "language": "en_US",
  "rulebaseName": "SampleRuleBase",
  "mandatoryValidationsSettings": {
    "validateOnNextForm": true,
    "validateOnPreviousForm": true,
    "validateOnSubmit": true
  },
  "bootstrapData": {}
}
```

Acceptance Criteria

- A new case is created when the External Source Magnum custom action button is clicked the first time in an open application.
- A new case is not created when the External Source Magnum custom action button is clicked after the first time in an open application.
- Specific data is added to the bootstrapping of the Magnum case during.
- The rulebase ID used to create the case is stored in a data item MAGNUM_RULEBASE_NAME for retrieval after submission.

8 Add a dialog that opens when the custom action button is clicked

When the custom action button is clicked, open a dialog and initialize the Magnum forms renderer. This dialog will have a close button, which will trigger a save of the Magnum data when clicked.

By default, Magnum renders a save button. Override this behavior so the data is saved only when the dialog is closed, at which time the data will be retrieved and mapped into FireLight. Do the same with the navigation buttons, so we can override the behavior.

The Magnum dialog should not close when clicking Next/Previous on the first/last page of the case.

Acceptance Criteria

- A dialog opens when the External Source custom action button is clicked.
- When opened, the dialog contains the Magnum underwriting interview questions.
- A Close button is shown on the bottom right of the dialog.
- Verify when the Close button is clicked, the Magnum data is saved and the dialog closes. To test, enter some data in the Magnum dialog and close, then reopen. The previously entered data should be saved.
- Verify when a user clicks off the open Magnum dialog that it remains open.
- Hide the save button native to Magnum since the data is not saved in Magnum.
- Hide the Continue button native to Magnum.
- Hide the Back button native to Magnum.
- Add a Next button to the Magnum dialog to go to the next interview page.
- Add a Previous button to the Magnum dialog to go to the previous interview page.

9 Store the status of the Magnum case when the dialog is closed

Add a new endpoint to the wizard controller, which will return the status of a Magnum case. Valid Magnum statuses are In Progress and Finished.

Status of the case as part of a JSON object as a data item and also stores the case ID as a separate data item so it can be opened multiple times.

API for the Case status is <https://mydomain.com/magnum/v1/cases/{CaseID}/status>.

When the Magnum dialog is closed, make a call to the status check method and store the current status in the data item for the button.

[URL for status retrieval:

GET <https://mydomain.com/magnum/v1/cases/{caselId}/status>

]

Acceptance Criteria

- Magnum status is returned when the dialog is closed and stored in the data item for the Magnum custom action button.
- Magnum save should be triggered when the dialog is closed.
- The status string should be stored in the data item {Button_Data_Item}_MAGNUM_STATUS.
- Valid status values are INTERVIEW_IN_PROGRESS and INTERVIEW_FINISHED.
- Verify the summary JSON is stored in the application request table.

10 Map data in Firelight Outbound Mapping List

The outbound mapping needs to occur prior to the creation and the update of the Magnum case. The mapping should first use the Outbound Mapping List to copy less-complex items (non-indexed), and then should pass the information into the provider to let it change the data as needed.

The outbound list is optional. The provider can create the full outbound list if desired.

Acceptance Criteria

- Pass data from the fields in the application that are defined in the Outbound Mapping List.

11 Map data between Magnum and FireLight

Using the inbound mapping list custom list attached on the custom action button, add the ability to map data between the case info received from Magnum and the applicable FireLight data items.

Each row in the custom list will contain two items, the Magnum field name, and the FireLight data item ID. When the Magnum dialog is saved and closed, map the data from the Magnum dialog to the appropriate FireLight data items.

[Sample API call for Magnum summary:

GET https://mydomain.com/magnum/v1/cases/{{caseId}}/summary

]

Acceptance Criteria

- Data is mapped from Magnum dialog to FireLight data items on the application wizard.
- Verify data fills the applicable fields on forms and wizards with the Yes/No underwriting questions.
- Verify that the data type maps correctly (e.g. dates, strings, numbers, etc.).
- The Inbound Mapping List is used to determine which Magnum items map to FireLight data items.
- Store the raw JSON of the last summary call to Magnum in the data item {Button_Data_Item}_MAGNUM_SUMMARY.

12 Update Magnum case data whenever dialog is opened

Track data items in FireLight defined in the Outbound Mapping List. Whenever the Magnum dialog opens, always send in the latest bootstrap data from FireLight.

[Sample API call to update Magnum case:

POST https://mydomain.com/magnum/v1/cases/{{caseId}}/forms/bootstrap

```
{
  "attributes": (
    {
      "attribute": "case.Agency",
      "ddl": false,
      "value": {
        "stringValue": "EN00005805"
      }
    }
  )
}
```

Acceptance Criteria

- Verify changed data in the outbound mapping list is passed to Magnum when it opens.
- An update is always sent regardless if data has changed since the last update to Magnum.

13 Call Decision API to get underwriting decision from Magnum

When the status passed back from Magnum is Finished, FireLight calls the Decision API to retrieve the underwriting decision and add the data into a data item named {button_dataitemID}_MAGNUM_CASE_DECISION. Rules can be added to set the appropriate data item on the form(s), which will be passed when the application is submitted.

FireLight will store whatever code is received in the MAGNUM_CASE_DECISION data item. By default, only the case decision will be stored in a data item ({magnum_button_dataitem}_MAGNUM_CASE_DECISION).

The full decision JSON will be stored as a Service Request. Only one copy will be retained - every time a new decision is retrieved, the prior decision will be overwritten.

The underwriting structure differs for each client. To support this custom feature in Magnum, the full underwriting structure will be available to the provider so specific decisions can be located from the JSON and put into data items.

Acceptance Criteria

- A valid support code status is passed to FireLight when the Magnum case status is complete.
- MAGNUM_UNDERWRITING_DECISION data item contains the underwriting case-level decision data regardless of the case status.
- Full decision JSON is passed to FireLight when the Magnum dialog is closed.
- Full decision JSON is available to the provider.
- Full decision JSON is stored encrypted in the ServiceRequest table.

14 Add Bootstrap API to merge interview questions and Magnum IDs

Add logic for the Bootstrap API to merge interview questions and Magnum IDs for the JSON.

FireLight will retrieve the rulebase UUID from the Magnum rulebase API. The API will return a list of available rulebases. FireLight will retrieve the one that matches the rulebase name defined in the wizard designer custom action properties.

Once FireLight acquires the UUID, it will be used to retrieve the bootstrap form definition from a separate Magnum API. The data will be parsed into a list of items that can be merged with the bootstrap attribute list by locator/attribute properties and add the questionDefinitionUUID to each attribute that has an equivalent bootstrap descriptor.

Acceptance Criteria

- List of FireLight data items are merged with Magnum IDs for each question in an ID property for the JSON.

15 Clear Magnum data on a copied activity

Since a user can change the insured and other relevant data on a copied activity, FireLight needs to clear out the Magnum data including the Case ID and Status and treat it as a new Magnum case.

Acceptance Criteria

- Verify all Magnum data is cleared in a copied activity that contains a Magnum Case ID and Status.
- Applies to both a Copy As Is and a Copy with Changes in All Activities.
- Test with a Finished Magnum case and an In Progress Magnum case.

16 Disable Next/Previous buttons when not available

By default, the Next/Previous buttons close the Magnum dialog when they cannot navigate because the next/previous page does not exist.

Change the logic to disable the Previous button when on the first page of Magnum and the Next button when on the last page of Magnum.

Acceptance Criteria

- On the first Magnum interview page, Previous should be disabled.
- On the last Magnum interview page, Next should be disabled.

17 Add audit entries to activity and service request table entry

Add application audits when the Magnum dialog is opened and when the Magnum dialog is closed and the Web service calls are made to Magnum. Also, add an entry in the service request table.

Activity Audits:

1. New Magnum case is created: A Magnum case with an ID of {MAGNUM_CASE_ID} was created using rulebase {rulebase name} by {user name}.
2. Dialog is opened: A Magnum case with an ID of {MAGNUM_CASE_ID} was opened by {user name}.
3. Dialog is closed: A Magnum case with an ID of {MAGNUM_CASE_ID} was closed.
4. Case was updated with new bootstrap info: A Magnum case with an ID of {MAGNUM_CASE_ID} was updated with new bootstrap data by {user name}.
5. Case is marked as finished by Magnum: A Magnum case with an ID of {MAGNUM_CASE_ID} was changed to a status of INTERVIEW_FINISHED.

Service Request Table:

1. Add a single record in the service request table containing the case ID and the JSON returned from the Magnum summary service.
2. Add a single record in the service request table containing the full case decision JSON returned from the Magnum decision service.
3. When the activity is submitted, give the provider access to the Magnum data in the Service Request table.

Acceptance Criteria

- An audit appears when a new Magnum case is created.
- An audit appears in the application each time a Web service call is made to Magnum when the dialog is opened.
- An audit appears in the application each time a Web service call is made to Magnum and the Magnum dialog is closed and the case status/decision/summary is retrieved.
- An audit appears when the Magnum case is updated with new bootstrap information.
- An audit appears when the Magnum case is closed and the case status is INTERVIEW_FINISHED.
- A single record appears in the service request table containing the decision JSON returned by the Magnum API.
- A single record appears in the service request table containing the case ID and the JSON returned from the Magnum decision API.
- Provider access is available to the service request table at the time of submission.

18 Add provider hook for the bootstrap generation at case creation and updates

The provider will handle the creation of complex outbound bootstrap data passed from FireLight to Magnum. Simple non-indexed attributes can be managed via the outbound mapping custom list or the provider.

The following process applies when the Magnum dialog is opened including at case creation:

1. If an Outbound Custom List is defined in the custom action button properties, FireLight will automatically create the bootstrap JSON from the data.
2. If an Outbound Custom List is defined in a custom action button in the wizard designer, it will be used to create the initial bootstrap items for Magnum. The provider can extend the bootstrap outbound data. If no outbound custom list is specified, the provider will generate the full bootstrap outbound data items.
3. The provider can add the bootstrap attributes. Typically, these are the indexed data items such as riders, existing coverages, and multiple products.
4. If the provider applies, it will pass the final list of bootstrap items.

Acceptance Criteria

- Verify the provider can modify the outbound data passed from FireLight to Magnum and that the modified data is passed from FireLight to Magnum.
- If the provider is not changing the custom list, verify the original custom list is available.
- If no outbound custom list exists, verify the provider is able to create and pass the outbound data.

19 Add provider hook for the custom list inbound data

Add provider hook for the custom list inbound mapping list data to allow adjustments to be made to the data being passed from Magnum into FireLight. The provider can replace or append to the custom list.

Acceptance Criteria

- Verify that the provider can adjust the Inbound Mapping Custom List prior to FireLight mapping the summary data into data items.
- If the provider is not changing the custom list, verify the original custom list is available.

20 Display error message if Magnum Web service is not available

If the Magnum Web service is not responding, display an error message: There was a problem contacting the Magnum service. Please contact your administrator for assistance or try again later.

The text will be localized through the database and clients will be able to change the data in the Admin Tool.

Acceptance Criteria

- An error message displays when Web service is not available.