

## The Loans module

<b>1. INTRODUCTION</b>	<b>1</b>
<b>2. METHODOLOGY</b>	<b>1</b>
<b>3. INFRASTRUCTURE</b>	<b>2</b>
<b>4. RESULTS AND RECOMMENDATIONS</b>	<b>2</b>
4.1 Selection of the specimens	2
4.2 Creation of a new loan	4
4.3 Create a PDF of the loan contract	10
4.4 Add the PDF of the loan contract as a related file	16
4.5 Recommendation	16

### 1. INTRODUCTION

The loans of specimens is an important part of the valorisation of the collection. These loans can be divided into

- scientific loans for research (from internal or external scientists) or
- for exhibition (from internal or external requests)

The “Loan” module already existed in DaRWIN but it was not user friendly and not used by the curators. It concerns only the scientific loans as the Exhibition loans use specific templates.

The setup of the DiSSCO infrastructure will change the loans procedures and the developments made in the framework of the NaturalHeritage project are one step in this process even if the alignment phase is not achieved and that additional work needs to be done.

### 2. METHODOLOGY

The loans module of Darwin creates a dynamic list of the specimens included in the loan contract. This means that the data displayed in the contract are updated each time you print the contract. This can be an advantage as it displays the real time information of the specimens but it is also a disadvantage as it doesn't store the original information when the contract was established.

It is thus necessary to freeze the data or to print a pdf version of the contract and to store it independently, to save the contract as it was when the loan was made. This PDF version can be

stored directly in DaRWIN as a multimedia file or in an external Content Management System as Plone or in a Cloud Storage or external drive with url access.

### 3. INFRASTRUCTURE

The PDF of the loan is generated by an external software, Pentaho (<https://www.hitachivantara.com/en-us/products/data-management-analytics/pentaho.html>). It's located on a different internal server than DaRWIN. Data are sent to the program which can generate various reports, in various designs. For the loans, a pdf is chosen but DaRWIN uses it also to generate excel reports. It's based on templates used by the program to present data.

Pentaho is now a commercial application but RBINS and RMCA use the Pentaho Community Project which is an open-source version of the software with a reduced set of features and capabilities.

### 4. RESULTS AND RECOMMENDATIONS

The loan module has been improved to allow the loan of parts of specimens and to be more user-friendly.

The procedure to create a loan is now as follow:

#### 4.1 Selection of the specimens

From the results of a search, pin the specimens you want to loan

**Specimens Search Result**

Back to criteria Print Thermic print

« < [1] > » 1 / 1 go

Your query retrieved:  
 3 specimen parts  
 3 distinct database records  
 1 distinct database I.G.  
 Between 7 and 7 physical specimens

	Taxon	Sampling locations	Coordinates	Codes
	<a href="#">Tilapia baloni</a> <a href="#">Trewavas &amp; Stewart, 1975</a>	98007/0012 <ul style="list-style-type: none"> <li>Zambia</li> <li>Zambia</li> <li>Kalungwishi river, pontoon Mporokoso-Kawambwa road</li> </ul>		<a href="#">RMCA_Vert_1998.007.P.0040-0041</a>
	<a href="#">Tilapia baloni</a> <a href="#">Trewavas &amp; Stewart, 1975</a>	98007/0013 <ul style="list-style-type: none"> <li>Zambia</li> <li>Zambia</li> <li>Chipembe-Lumangwe pontoon, Kalungwishi river</li> </ul>		<a href="#">RMCA_Vert_1998.007.P.0042-0043</a>
	<a href="#">Tilapia baloni</a> <a href="#">Trewavas &amp; Stewart, 1975</a>	98007/0009 <ul style="list-style-type: none"> <li>Zambia</li> <li>Zambia</li> <li>Chipembe, Kalungwishi river</li> </ul>		<a href="#">RMCA_Vert_1998.007.P.0100-0102</a>

Figure 1. Specimens pinned in the results list

Go to the view “Pinned specimens” to check that your chosen specimens are there

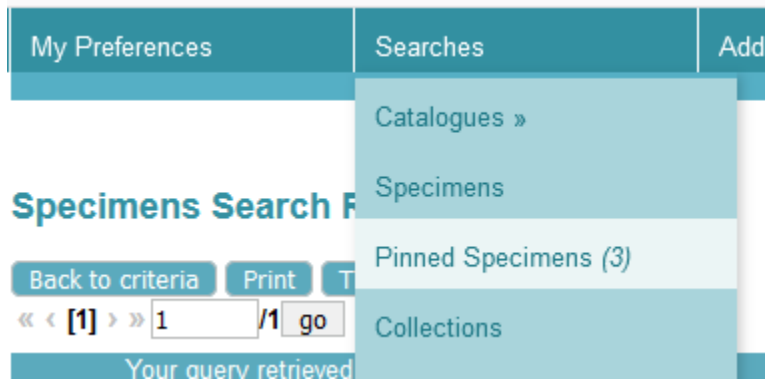


Figure 2. Menu to find pinned specimens.

## 4.2 Creation of a new loan

- Choose Add – Loans in the menu. It will open the loan form.

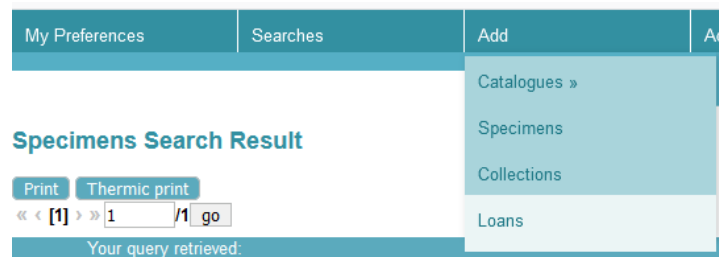


Figure 3. Menu to create new loan

The screenshot shows a web-based form for creating a new loan. At the top, there are two tabs: '< New loan >' (active) and 'Items overview'. The main form area is titled 'Loan' and contains the following fields and sections:

- Collection:** A dropdown menu labeled 'Choose Collection' with a search icon.
- Code:** An empty text input field.
- Starts on:** A date picker showing '04 / 11 / 2020'.
- Ends on:** A date picker showing 'dd / mm / yyyy'.
- Extended to date:** A date picker showing 'dd / mm / yyyy'.
- Description:** A large text area for entering details.
- Collection manager:** A text field containing 'Didier van den Spiegel'.
- Collection manager title:** A text field containing 'Head of collections'.
- Collection manager mail:** A text field containing 'didier.van.den.spiegel@afriamuseum'.
- NON-CITES:** A checkbox that is checked.

Below the main form area, there is a list of expandable sections, each with a dropdown arrow and a close button (X):

- People involved
- Loan status
- Properties
- Comments
- Related Files
- Darwin Users
- Maintenances

At the bottom left of the form, there are two buttons: 'Cancel' and 'Save'.

Figure 4. New empty loan form

- Choose a collection
- When you click in the field Code, the last value of a loan in that collection is shown and can be paste in the field when you click on "Paste to code of loan"

Figure 5. First section of the loan form

- Fill the date from and to fields
- Other fields in section “Loan” are filled in automatically but verify the data:

Figure 6. First section of the loan form, filled in.

- Enter people involved in the loan : sender, receiver and if necessary transporter. If the receiver has full info as institution and address, there are automatically filled in in the fields that appear when you choose the receiver and come back to the loan form.

Add Sender							
Sender	Responsible	Contact	Checker	Preparator	Attendant	Transporter	Other
Parrent, Miguel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add Receiver							
Add Transporter							
Receiver	Responsible	Contact	Checker	Preparator	Attendant	Transporter	Other
Semal P. (Mr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Receiver mailing info:

Institution: Royal Belgian Institute of natural sciences

Address: rue Vautier, 29    Zip: 1000    City: Brussels    Country: Belgium

Figure 7. People section of the loan form

- Loan status is New
- In properties, add some info about the way specimens will be sent. For example, choose sent\_by\_airmail or weight. You have to add a new property for each info you want to add.

The screenshot shows a 'Property type' dropdown menu with the following options: gift, in\_exchange, loan\_at\_your\_request, loan\_for\_identification\_our\_request, packages\_count, return\_of\_borrowed\_material, return\_of\_material\_sent\_for\_id, sent\_by\_airmail, sent\_by\_surface, and weight. The 'Value' field is highlighted in green.

Figure 8. Properties section of the loan form. Popup to edit property.

The screenshot shows the 'Add Properties' form with the following fields: Property type (sent\_by\_airmail), Applies to (dropdown), Date from (calendar), Date to (calendar), Method (text), Is quantitative (checkbox), Is range (checkbox), Value (yes), Unit (dropdown), and Accuracy (text). The 'Value' field is highlighted in green.

Figure 9. Screen to add property Sent by airmail.

The screenshot shows the 'Add Properties' form with the following fields: Property type (weight), Applies to (dropdown), Date from (calendar), Date to (calendar), Method (text), Is quantitative (checked), Is range (checkbox), Value (400), Unit (gr), and Accuracy (text). The 'Value' field is highlighted in green.

Figure 10. Screen to add property Weight

Type	Applies to	Values	Date From	Date To
<a href="#">sent_by_airmail</a>		yes	01/01/0001 00:00:00	31/12/2038 00:00:00
<a href="#">weight</a>		400 gr	01/01/0001 00:00:00	31/12/2038 00:00:00

[Add Properties](#)

Figure

## 11. List of properties in the loan form

- Other sections may be filled in if necessary (comments, related files, maintenances)
- When this first tab “Edit loan” is filled in and saved, go to the second tab to add the specimens :

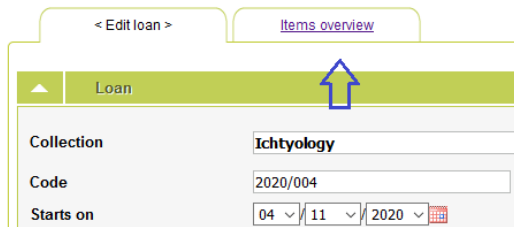


Figure 12. Second tab "Items overview"

Tab is empty when you open it for the first time.

## Overview

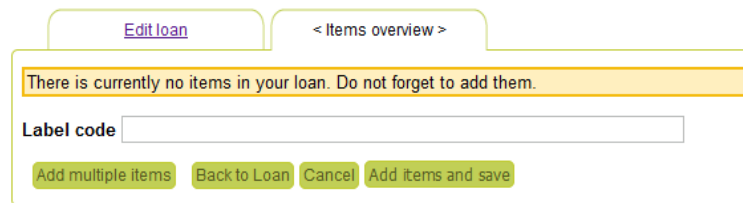


Figure 13. Empty tab Items overview

- Click on the button “Add multiple items”. A popup window will show you the specimens you pinned. Click on the button “Choose” to select some of them or on button “Choose all” to select all items.

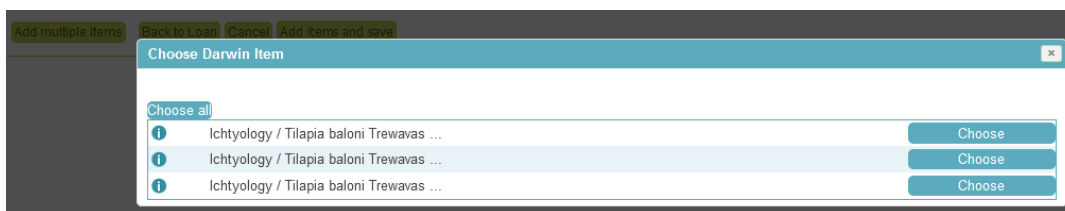


Figure 14. Popup with list of pinned specimens

The specimens are added to the tab “Items overview”



Overview

The screenshot shows a table with columns: Item, Main Code, Taxon, Details, and Expedition / Return. Three rows are visible, each representing a specimen added to the loan form. Each row includes a 'Change !' button, a link to the main code (e.g., RMCA\_Vert\_1998.007.P.0040-0041), the taxon name (Tilapia babini Trewavas & Stewart 1975), a details field, and a checkbox for 'Use Loan dates'. Below the table, there is a 'Label code' input field and buttons for 'Add multiple items', 'Back to Loan', 'Cancel', and 'Add items and save'.

Figure 15. Specimens added to the loan form

- Click on button “Add items and save” to save the loan
- If there are multiple parts in a specimen or several specimens in the container, you can choose which part of the specimen or how many specimens you want to loan,
- after the list has been saved. Click on ‘Export only part of package”

This screenshot shows a single specimen entry with ID 194315. It includes a 'Change !' button, the main code RMCA\_Mam\_1001, the taxon Gorilla beringei, and a details field. A dropdown menu is open, showing options for 'Use Loan dates' and 'Export only part of package'.

Figure 16. Button to specify part or amount of specimens

And in the table that appears, choose the parts or enter a number of specimens:

This screenshot shows the specimen entry 194315 with a table for 'Specimen parts'. The table has columns: Part nr, Part name, Container number, Type, Substance in container, and Part status. Below the table, there are input fields for 'Change number of specimens to loan: Total', 'Males', 'Females', and 'Juveniles'.

Part nr	Part name	Container number	Type	Substance in container	Part status
1	p+cr+sq	null	storage_skeleton		<input type="checkbox"/>
2	p+cr+sq	null	storage_skin		<input checked="" type="checkbox"/>
3	p+cr+sq	null	storage_skull		<input type="checkbox"/>

Figure 17. Fields to specify part or amount of specimens

Again, save by clicking on “Add items and save”.

### 4.3 Create a PDF of the loan contract

When you're ready with the specimens, click on "Back to loan" and on the first tab, click on "Print loan" to generate a pdf that can be printed.

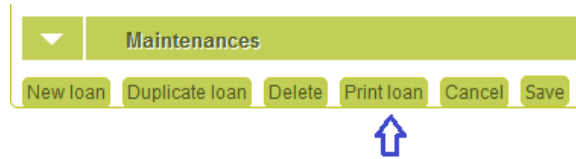


Figure 18. Button to print loan (generate pdf)

The generated pdf contains several sheets for internal administration, for the sender and the receiver. Here are the various sheets. Some data are automatically inserted, as email or phone of the receiver and sender.

Ondergetekende vraagt de verzending van de hierna beschreven zending :	
Le soussigné demande l'expédition de l'envoi décrit ci-après:	
Verzender: Expéditeur:	Biocol/Didier Van den Spiegel
Datum: Date:	04.11.2020
Bestemming: Destinataire:	Semal P. (Mr) Royal Belgian Institute of natural sciences rue Vautier, 29, 1000, Brussels Belgium Email: psemal@naturalsciences.be      Phone:
Beschrijving die de identificatie mogelijk maakt: Description permettant d'identifier l'envoi:	
Gewicht : Poids :	
Verzonden op : Expédié :	
Frankering : Affranchissement :	
De verzendingsdienst : Le service d'expédition :	
Per vliegtuig : Par avion :	
Aangetekend : Recommandé :	
De sectie of dienst chief : Le chef de section ou de service :	

Figure 19. Sheet 1 of loan pdf

*The Royal Museum for Central Africa, Tervuren - Belgium***SHIPMENT INVOICE**

**Date:** 04.11.2020  
**Ship to:** Semal P. (Mr)  
**Institution:** Royal Belgian Institute of natural sciences



**Address:** rue Vautier, 29, 1000, Brussels

Belgium

**Phone:**  
**E-mail:** psemal@naturalsciences.be

**Airbill number:**

**Carrier:**

**Nbr of pieces:**

**Total weight:**

**Dimensions:**

**Full description of goods:****Scientific content, not restricted (Special provision A180 applies):**

**Content:** research specimens / tissue samples (delete where applicable)

**Preservative liquid:** ethanol/glycerin (delete where applicable)

**Taxa :** *Gorilla beringei*; *Tilapia baloni* Trewavas & Stewart, 1975

Content is packaged in exempted quantities (less than 0,5 liters) of liquid, and are of scientific value only. The specimens are **non-hazardous, non-pathogenic, non-CITES** and **non-commercial**. They must be kept wrapped in cloth and plastic to stay preserved; compromising their packaging could damage them and ruin their scientific value.

**Value for customs:** 5 euros  
**Name and address of sender:** Parrent Miguël  
 Department of African Zoology  
 Royal Museum for Central Africa  
 Leuvensesteenweg 13  
 B-3080 Tervuren  
 Belgium

**Reason for export:** Loan for scientific study  
 This material remains property of RMCA

**Declaration:** I declare that the above information is true and correct to the best of my knowledge.

For and on behalf of the above-named institution:

**Name (in print):** Parrent Miguël

**Signature:**

**Position in company:** Collection manager - Ichthyology

Figure 20. Sheet 2 of loan pdf


 KONINKLIJK MUSEUM VOOR MIDDEN AFRIKA MUSÉE ROYAL DE L'AFRIQUE CENTRALE TERVUREN	Tervuren, 4/11/2020									
Koninklijk Museum voor Midden-Afrika - Musée royal de l'Afrique centrale Section Invertebrates non-insects B-3080 Tervuren (Belgium)	Semal P. (Mr) Royal Belgian Institute of natural sciences									
Concerns : Loan 2020/004	rue Vautier, 29, 1000, Brussels Belgium									
Dear,										
It is my pleasure to send you the material detailed in the enclosed forms. Please sign and return copy no. 1 of the loan form upon receipt of the material. Copy no. 2 is for your own records. Copy no. 3 is to be added to the loan when returned.										
The date for return has been fixed to 2021-12-01 . Would you need a loan extension, please let me know.										
Sincerely yours,										
Didier van den Spiegel Head of collections Tel. +32-2-769 54 11 Fax. +32-2-769 56 95 didier.van.den.spiegel@africamuseum.be										
<table border="1"> <tr> <td data-bbox="358 1325 711 1350">Loan no. 2020/004 was sent</td> <td data-bbox="721 1339 837 1365"><input checked="" type="radio"/> by air mail</td> <td data-bbox="922 1339 1070 1365"><input type="radio"/> at your request</td> </tr> <tr> <td></td> <td data-bbox="721 1402 837 1428"><input type="radio"/> by surface</td> <td data-bbox="922 1402 1190 1428"><input type="radio"/> for identification at our request</td> </tr> <tr> <td colspan="3" data-bbox="358 1465 883 1491">1 package(s). Shipping date 04/11/2020. Date for return 01/12/2021</td> </tr> </table>		Loan no. 2020/004 was sent	<input checked="" type="radio"/> by air mail	<input type="radio"/> at your request		<input type="radio"/> by surface	<input type="radio"/> for identification at our request	1 package(s). Shipping date 04/11/2020. Date for return 01/12/2021		
Loan no. 2020/004 was sent	<input checked="" type="radio"/> by air mail	<input type="radio"/> at your request								
	<input type="radio"/> by surface	<input type="radio"/> for identification at our request								
1 package(s). Shipping date 04/11/2020. Date for return 01/12/2021										

Figure 21. Sheet 3 of loan pdf

In the Details column of the list of specimens, you can find back which part of the specimen is sent.


		KONINKLIJK MUSEUM VOOR MIDDEN AFRIKA MUSÉE ROYAL DE L'AFRIQUE CENTRALE	
TERVUREN BIOCOL 13 Leuvensesteenweg 3080 Tervuren Belgium		LOAN N° <span style="border: 1px solid black; padding: 2px;">2020/004</span>	
Shipping date: 2020-11-04 Sent by airmail Handcarried by: Registered: 2020-11-04 Insured: Nr. of package: 1 Weight: 400 gr		To: Semal P. (Mr)  Royal Belgian Institute of natural sciences rue Vautier, 29, 1000, Brussels Belgium	
		Date for return 2021-12-01	
<input type="checkbox"/> Loan at your request  <input type="checkbox"/> Loan for identification at our request  <input type="checkbox"/> In exchange		<input type="checkbox"/> NON-CITES specimen  <input type="checkbox"/> Return of material sent for ID  <input type="checkbox"/> Return of borrowed material  <input type="checkbox"/> Gift	
<b>Contents</b>			
Reg n°	Item names	Details	Remarks
1	1001	Gorilla beringei	Part nr 2: Name =p+cr+sq physical, p+cr+sq
2	1998.007.P.0040-0041	Tilapia baloni Trewavas & Stewart, 1975	physical, alc
3	1998.007.P.0042-0043	Tilapia baloni Trewavas & Stewart, 1975	physical, alc
4	1998.007.P.0100-0102	Tilapia baloni Trewavas & Stewart, 1975	physical, alc
Supervised by : Didier van den Spiegel <span style="float: right;">didier.van.den.spiegel@africamuseum.be</span> Contact : Parrent Miguël, miguel.parrent@africamuseum.be			
Sender's signature		Received in good order Signature	
Loan n°. 2020/004 page 1			

Figure 22. Sheet 4 of loan pdf.

		KONINKLIJK MUSEUM VOOR MIDDEN AFRIKA MUSÉE ROYAL DE L'AFRIQUE CENTRALE	TERVUREN	
BIOCOL 13 Leuvensesteenweg 3080 Tervuren Belgium		LOAN N°	2020/004	
Shipping date: 2020-11-04 Sent by airmail Handcarried by: Registered: 2020-11-04 Insured: Nr. of package: 1 Weight: 400 gr		To: Semal P. (Mr) Royal Belgian Institute of natural sciences rue Vautier, 29, 1000, Brussels Belgium		
		Date for return 2021-12-01		
<input type="checkbox"/> Loan at your request <input type="checkbox"/> Loan for identification at our request <input type="checkbox"/> In exchange		<input type="checkbox"/> NON-CITES specimen <input type="checkbox"/> Return of material sent for ID <input type="checkbox"/> Return of borrowed material <input type="checkbox"/> Gift		
<b>Contents</b>				
	Reg n°	Item names	Details	Remarks
1	1001	Gorilla beringei	Part nr 2:Name =p+cr+sq	physical, p+cr+sq
2	1998.007.P.0040-0041	Tilapia baloni Trewavas & Stewart, 1975		physical, alc
3	1998.007.P.0042-0043	Tilapia baloni Trewavas & Stewart, 1975		physical, alc
4	1998.007.P.0100-0102	Tilapia baloni Trewavas & Stewart, 1975		physical, alc
Supervised by :		Didier van den Spiegel	didier.van.den.spiegel@africamuseum.be	
Contact :		Parrent Miguel, miguel.parrent@africamuseum.be		
Sender's signature		Received in good order. Please sign this copy and send it back Signature		

Figure 23. Sheet 5 of loan pdf

Design of the pdf and link to data is done in Pentaho which is installed on a different server than DaRWIn. A client is installed on the pc of the user and a connection to the repository of the server is done to modify the templates. In the repository, several templates can be used to create reports or create the pdf for loans. These can easily be modified by adding fields, sections, linking fields to data,...

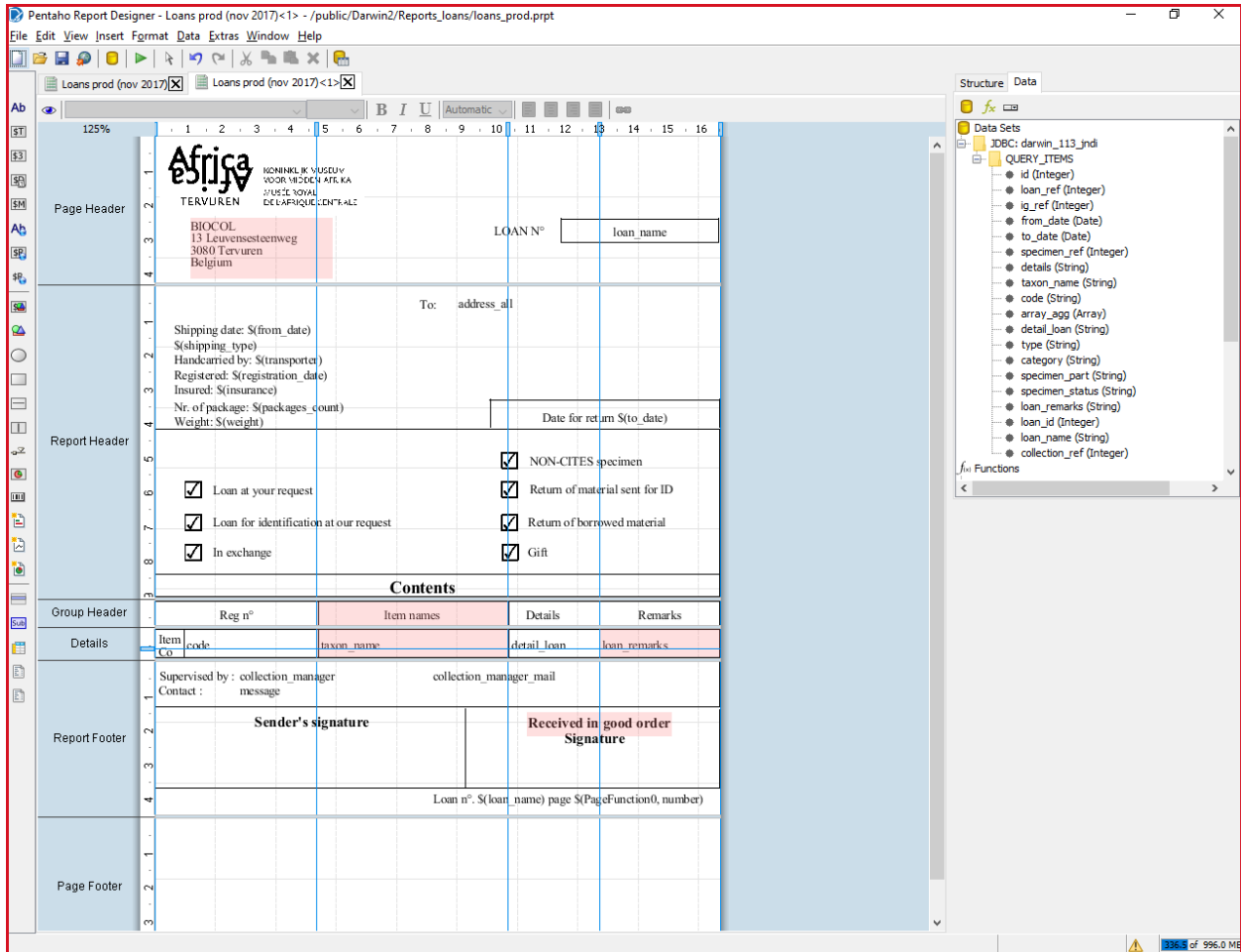


Figure 24. Designer interface of Pentaho

## 4.4 Add the PDF of the loan contract as a related file

The PDF file can then be added to the loan as a “related file” . It could be the PDF printed version or the scan of the contract with the signatures of the Institution and the third party.

The screenshot displays the 'Loans' module in the NaturalHeritage.BE interface. At the top, there is a search bar and a navigation menu. The main content area is divided into several sections:

- Loan:** A section with a title bar and a status bar indicating 'Loan closed on 15/01/2013'. Below this, there are fields for 'Name' (The munich show), 'Starts on' (28/10/2012), 'Ends on' (28/10/2012), and 'Extended to date' (dd/mm/yyyy). A 'Description' field contains 'Mineralientage Munchen'. A link 'Take a snapshot of the loan' is visible.
- Related Files:** A section with an 'Add File' button.
- People involved:** A section with an 'x' icon to close it.

At the bottom of the interface, there are four main menu categories:

- Reporting:** Includes Collections statistics, Reports, Pinned Specimens, Saved search, and Big Brother (admin only).
- Loans & Labels:** Includes Loans and Labels.
- Import & Mass action(s):** Includes Taxonomy, Geonames, Specimens, Mass Action(s), and Testing Import.

Figure 25. New Darwin interface in NH Portal to add the PDF as a “Related file”.

## 4.5 Recommendation

In order to align the processes between RBINS, RMCA and with future developments of DISSCO and ELVIS, a more flexible system should be used for the final step of the process, export of the data in a generic format, for example a csv file, that could be used in other programs to format the final report correctly and save it as pdf or to import these data in the future ELVIS platform.

Authors : Jean-Marc Herpers & Patrick Semal