Musikwissenschaftliches Seminar
Detmold/Paderborn

Detmolder Hoftheater Projekt

Theatre Tool

Systems Design

For Version TheatreTool_1-Dev
`https://github.com/Detmolder-Hoftheater/TheatreTool_1-Dev`

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Part I.
Introduction

The tool is designed for visualizing, loading and searching archived information e.g for theatre in defined time period. The Informations are encoded in the formats of the Text Encoding Initiative (TEI) and Music Encoding Initiative (MEI) and saved in the XML-Database. Database structure and time period can be defined in the property files.

Part II.
User Interface Design

The User interface contains three parts: toolbar with search functions, navigation tree and tabview.

1. Toolbar

Layout

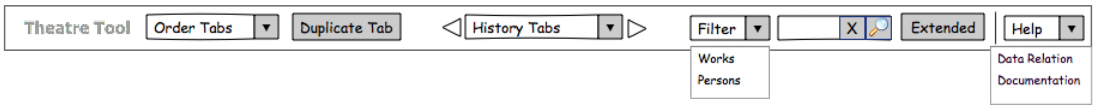

Figure 1: Tool Bar

Action Paths and Results

1. Select an item in "Order Tabs" combobox —> all opened tabs will be reordered; default: "Stapeln". (disabled)

2. Select an item in "Duplicate Tabs" button —> selected tab will be dublicated. (disabled)

3. Select an item in "History Tabs" combobox —> selected tab will be activated; alternative navigation - with arrows.

4. Select an item in "Filter" combobox and enter search term in search field -> select search icon -> a new tab will be opened with search results.
5. Select "Extended" button -> a window will be opened for enter search filters. (disabled)
6. Select an item in "Help" combobox:
   a) "Data Relation" —> open a windows with data relations diagram;
   b) "Documentation" —> open a new browser tab with systems design document.

1.1. Simple Search

Simple search function contains a filter field (work title or person name) and search fild with search icon as button.

Action Paths and Results

1. Select an item in "Filter" combobox and search field is empty -> select search icon -> a new tab will be opened with all persons or works.
2. Select an item in "Filter" combobox and enter optionally search term in search field -> select search icon -> a new tab will be opened with search results.
3. An item in "Filter" combobox is not selected and search term in search field is entered or empry -> select search icon -> a information window will be opened: "Please select the searchfilter!"
4. If search field are not empty -> select "x" -> clear search field.

Validation and Constraints

1. "Filter" in combobox should be set;
2. Upper case and lower case are equal;
3. For all person names variants and for all work title variants will be searched.

1.2. Extended Search

This function is disabled.

2. Navigation Tree

The Navigation Tree contains two subtrees preliminary called: "Play Operation" and "Management". The "Play Operation" subtree contains information about the theater and its public relations work. The "Management" tab contains any information about the inside organization of the theater.

Layout

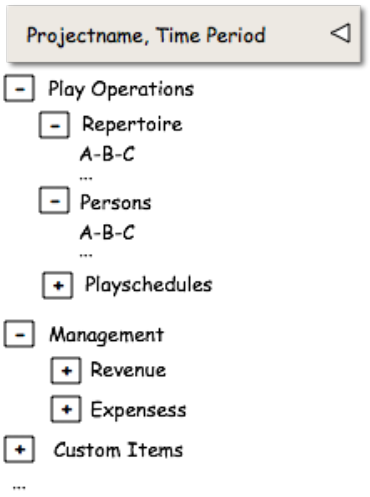

Figure 2: Navigation Tree

Action Paths and Results

1. Click for any end-node —> a new tab will be opened. If one tab for clicked item is opened -> this tab will be aktivated. For both cases a new item in "History Tabs" combobox will be created.

2. Click to arrow in title bar -> navigation tree will be hide.

3. If navigation tree is hidden, click to title bar -> navigation tree will be opened for item selection; select an item and cklick to section field -> navigation tree will be hide again. Click arrow to open the navigation tree.

Validation and Constraints

1. "Projectname" and "Timeslot" will be generated from property file: dbStructure.xml.

2. "Repertoire" tabs: show all works with all title variants in alphabetic order.

3. "Playschedules" end nodes are years generated from property file: dbStructure.xml.

4. "Persons" tabs: show all persons with all name variants in alphabetic order.

5. "Revenues" and "Expensess" end nodes are years generated from property file: dbStructure.xml.

6. Cutom tabs end nodes are name generated from property file: dbStructure.xml.

Data sources and targets

Sources	getDBStructure.xql getRevenueItems.xql getExpensessItems.xq getSchedulesItems.xql getCustomItems.xql

3. Tab View

Execution

One click for end node in navigation tree, or cklick link in relation data fields in sections, or cklick in search result table row a new closable tab will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

3.1. Repertoire Tab

Execution

Click for "Repertoire" end-node in navigation tree —> a new tab will be opened. Tab contains a content section and navigation tree.

If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Layout

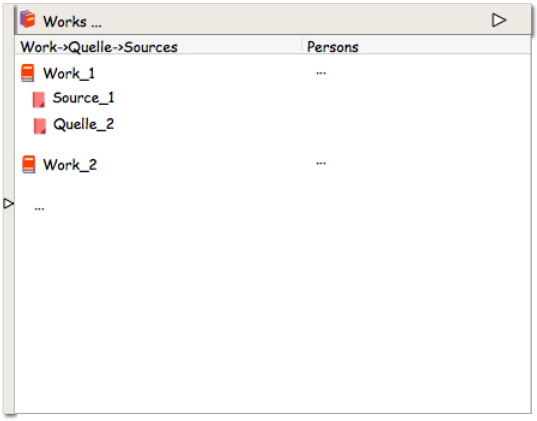

Figure 3: Repertoire Tab

Widgets description

Table tree contains two columns: works -> sources and presons.
First column
Show works with one or more sources. Sources are optional.
Second column
Show all persons for this work. Persons are optional.

Action Paths and Results

1. Click for one work or source —> a new section will be opened.
2. Click to arrow in title bar or right side arror from tree -> navigation tree will be hide.
3. If navigation tree is hidden, click to title bar -> navigation tree will be opened for item selection; select an item and cklick to section field -> navigation tree will be hide again. Click arrow to open the navigation tree.

Validation and Constraints

Work titles are alphabetical sorted. "The", "Der", "Die", "Das", "Le", "La", "L'" are ignored.

3.1.1. Work Section

Execution

Click for one work in "Repertoire" tab navigation tree —> one section will be opened.

Layout

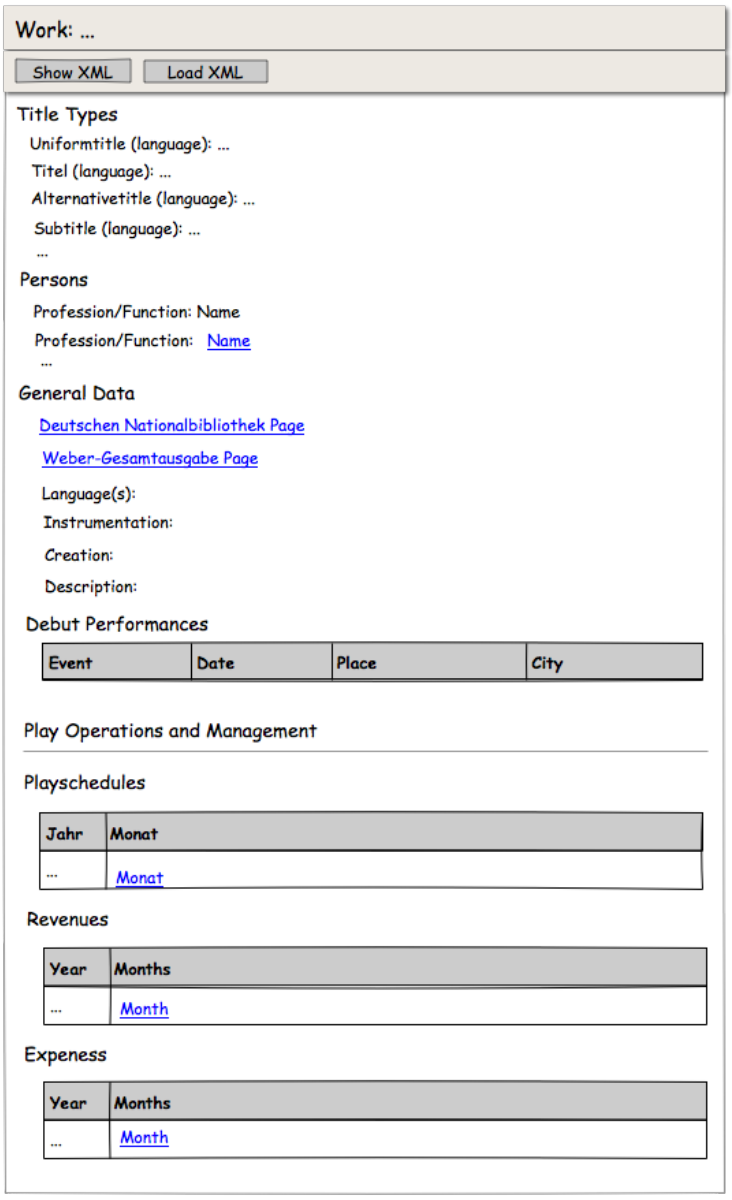

Figure 4: Work Section

Widgets description

Work section contains following sections: "Title Types", "Persons", "Generally Informations", "Playschedules", "Revenues", "Expensess".

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)
3. Click on name link in „Persons“ section a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.
4. Click on extern link in „Generally Information“ section a new browser tab with detailed information will be opened. Extern links are "Deutsche Nationalbibliothek" and "Weber-Gesamtausgabe".
5. Click on link in „Playschedules“, or „Revenues“, or "Expensess" table a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Validation and Constraints Only exists data fields will be show.

Data sources and targets

Sources	getWorks.xql

3.1.2. Source Section

Execution

Click for source in "Repertoire" tab navigation tree —> one section will be opened.

Layout

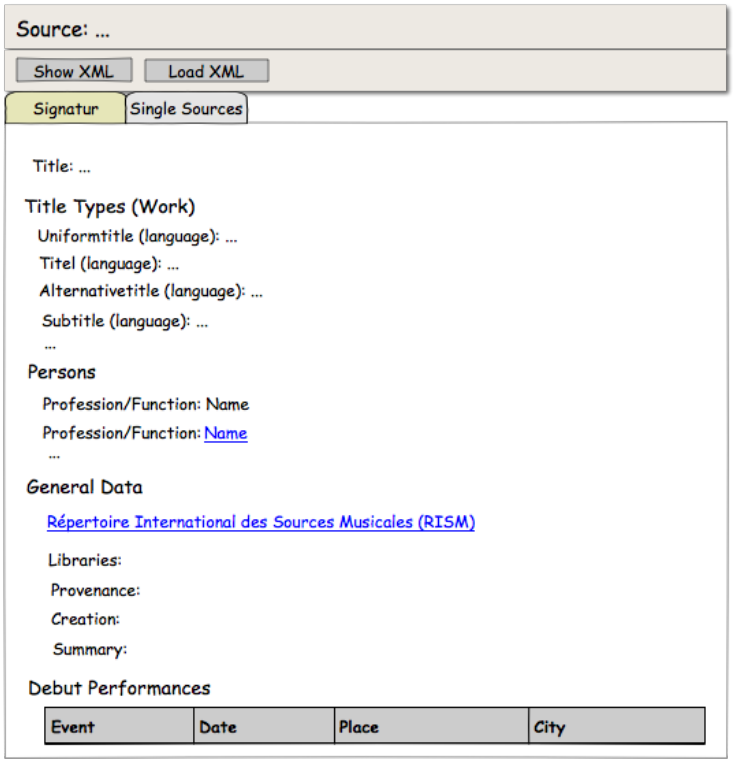

Figure 5: Source Section

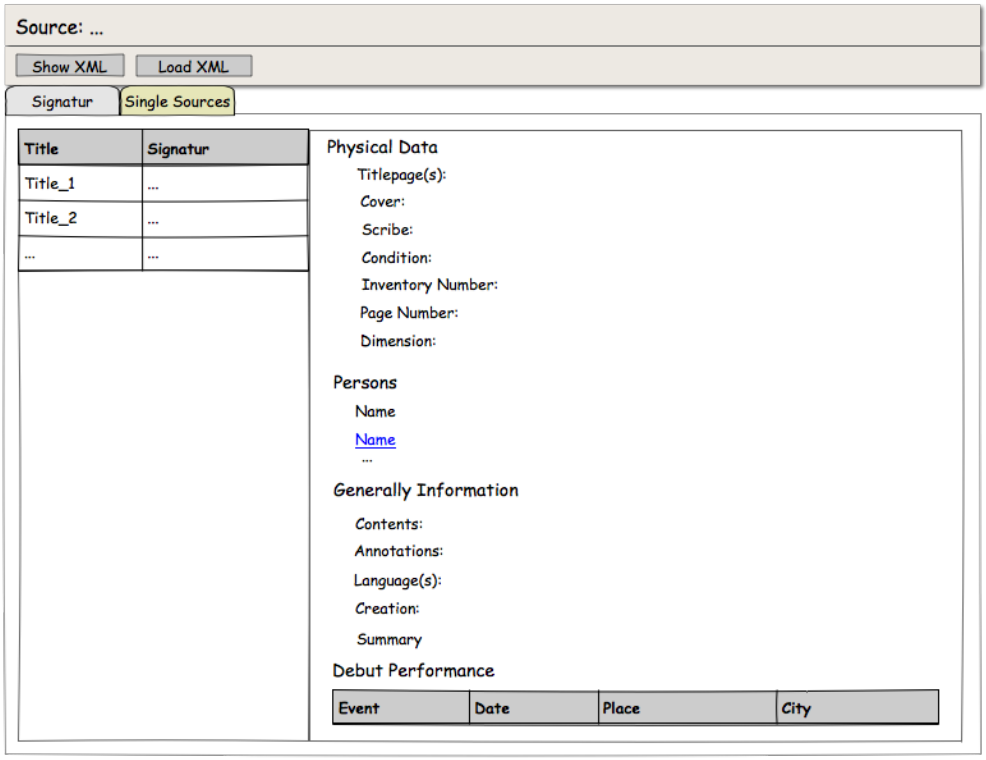

Figure 6: SIngle Source Section

Widgets description

Source section contains tow tabs: Source and Single Sources.

Source tab contains following sections: "Title Types", "Persons", "Generally Informations", "Playschedules", "Revenues", "Expensess".

Single Sources tab contains following sections: "Physical Data", "Persons" and "General Data".

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)
3. Click on name link in „Persons“ section a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Source tab Click on extern link in „Generally Information“ section a new browser tab

with detailed information will be opened. Extern links is "Repertoire International des Sources Musicales" (RISM).

Validation and Constraints

Only exists data fields will be show.

Data sources and targets

Sources	getSource.xql getSourceDetails.xql

3.2. Playschedules Tab

Execution

Click for "„Playschedules“" end-node in navigation tree —> a new tab will be opened. For each exists month one closable section will be created. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Layout

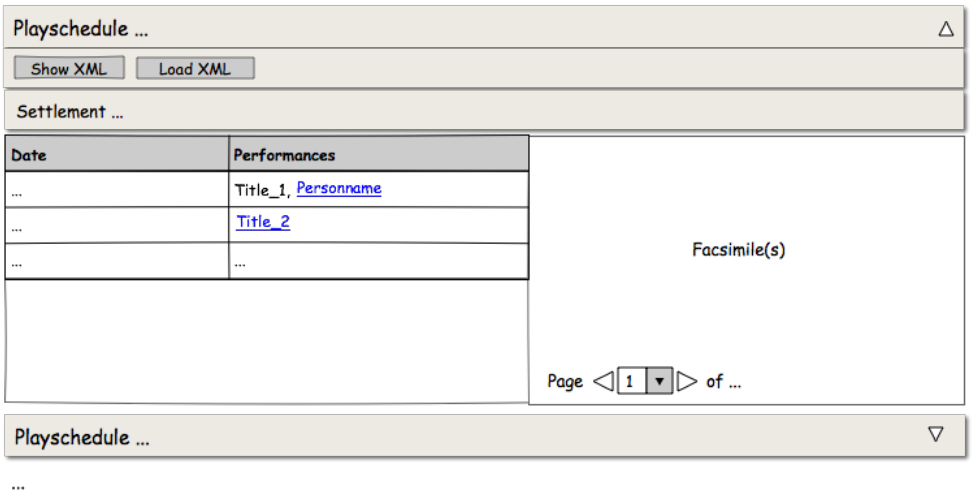

Figure 7: Playschedules Tab

Widgets description

Name	Mandatory/Optional
Settlementl	O
Date Column	O
Performances Column	O

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)
3. Click on name link for one person or on title for work -> a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Validation and Constraints

Section can contains a facsimile area. Facsimile area show one or more pages.

Data sources and targets

Sources	getMonthsForSelectedYear.xql getScheduleTable.xql

3.3. Persons Tab

Execution

Click for "„Persons“" end-node in navigation tree —> a new tab will be opened. Tab contains an detailed information section and navigation tree.

If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Layout

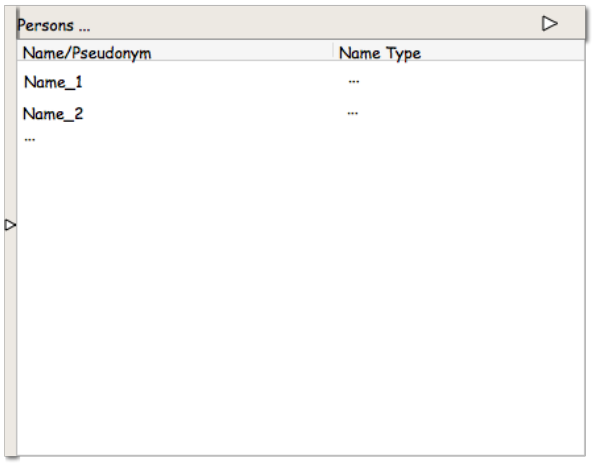

Figure 8: Navigation in Person Tab

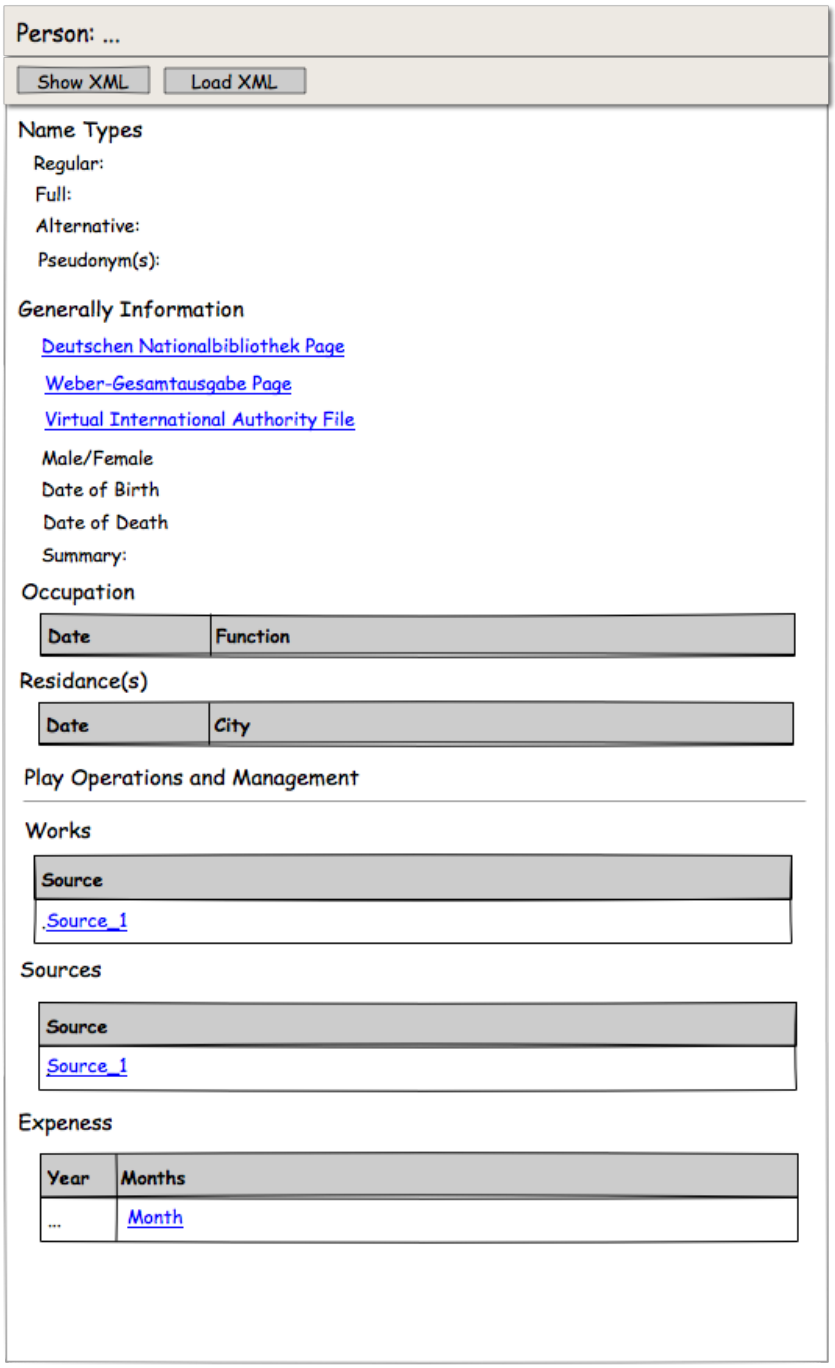

Figure 9: Person Tab

Widgets description

Navigation tree show persons sorted alphabetical. detailed information section contains "Name Types", "Generally Information", "Works", "Sources", "Expensess".

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)
3. Click on name link in navigation tree -> a section detailed information will be opened.
4. Click on name link in tables -> a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.
5. Click on extern link in „Generally Information“ section a new browser tab with detailed information will be opened. Extern links are "Deutsche Nationalbibliothek", "Weber-Gesamtausgabe" and "Virtual International Authority File".

Validation and Constraints

Only exists data fields will be show.

Data sources and targets

Sources	getPersonsForSelection.xql getPersonOverview.xql

3.4. Expensess Tab

Execution

Click for "„Expensess“" end-node in navigation tree —> a new tab will be opened. For each exists month one closable section will be created. Section can contains a facsimile area. Facsimile area show one or more pages.

If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Layout

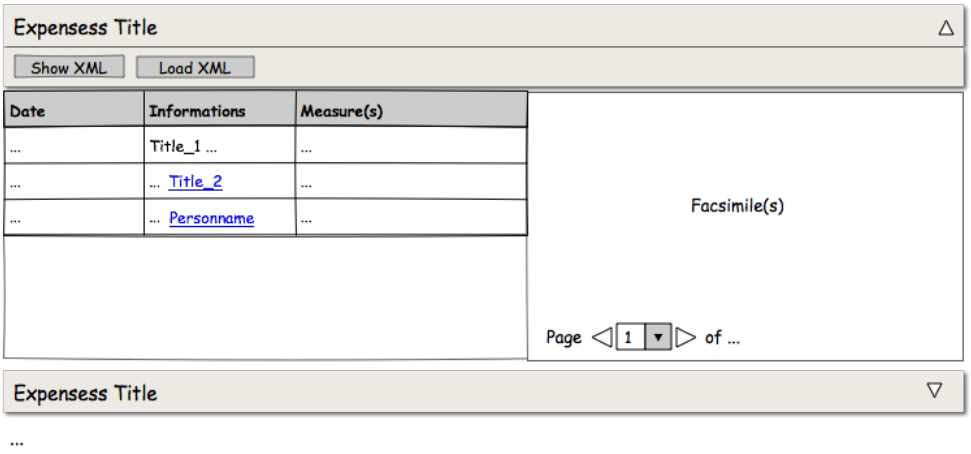

Figure 10: Expensess Tab

Widgets description

Name	Mandatory/Optional
Date Column	O
Information Column	O
Measure Column	O

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)
3. Click on name link for one person or on title for work -> a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Data sources and targets

Sources	getIssueNames.xql getIssueTable.xql

3.5. Revenues Tab

Execution

Click for „Revenues“" end-node in navigation tree —> a new tab will be opened. For each exists month one closable section will be created. Section can contains a facsimile area. Facsimile area show one or more pages.

If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Layout

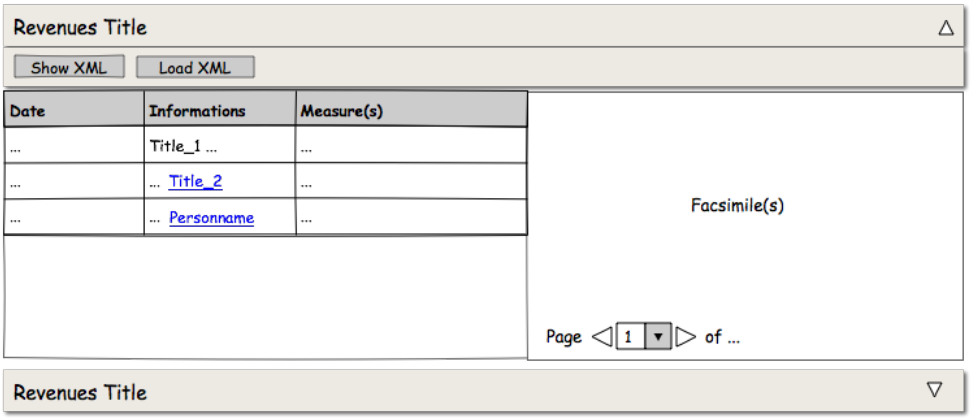

Figure 11: Revenue Tab

Widgets description

Name	Mandatory/Optional	
Date Column	O	
Information Column	O	
Measure Column	O	

Action Paths and Results

1. Select button "Schow XML"-> a window will be opened with xml content.
2. Select button "Load XML"-> a window will be opened for save xml content. (disabled)

3. Click on name link for one person or on title for work -> a new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Data sources and targets

Sources	getMonthsByRevenueYear.xql getRevenueTable.xql

3.6. Custom Items Tab

Execution

Click for "Custom Items" end-node in navigation tree —> a new tab will be opened. For each exists month one closable section will be created. Section can contains a facsimile area. Facsimile area show one or more pages.

If one tab for clicked item is opened -> this tab will be activated. For both cases a new item in "History Tabs" combobox will be created.

Widgets description

HTML- or PDF-FIle will be shown.

Data sources and targets

Get file from DB.

3.7. Search Results Tab

Execution

Select an item in "Filter" combobox and enter optionally search term in search field -> select search icon -> a new tab will be opened with search results. A new item in "History Tabs" combobox will be created.

Layout

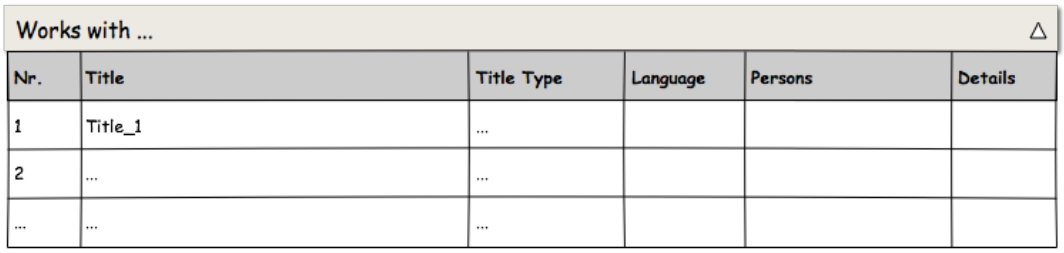

Figure 12: Search Results Tab for Works

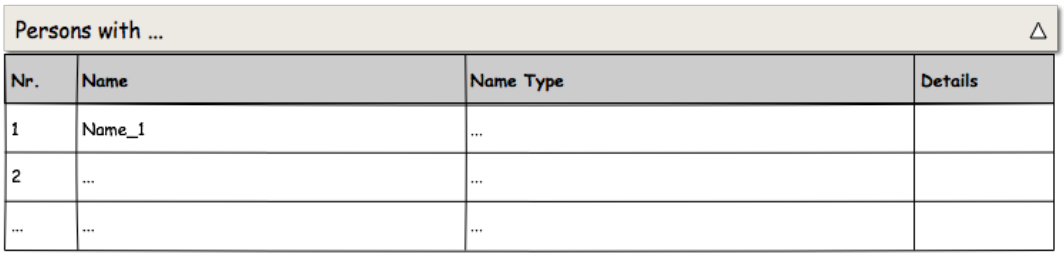

Figure 13: Search Results Tab for Persons

Widgets description

Name	Mandatory/Optional
Nr Column	M
Name Column	O
Name Type Column	O
Details Column	M

Action Paths and Results

Select icon in details column-> new tab with detailed information will be opened. If one tab for clicked item is opened -> this tab will be activated. For both cases a new item

in "History Tabs" combobox will be created.

Validation and Constraints

If searched information will be found in DB, a table with results will be shown.

Data sources and targets

Sources	searchWorks.xql searchPersons.xql

Part III.
Data Design

4. DB-Structure

Informations, presented as MEI-, TEI-, Image-, HTM-L or PDf-FIles, are saved in database for types (e.g works, persons, sources, ...) . For Facsimiles exists are image order. Images will be shown with a Leaflet library. For this library images must be cut (one Tool, that will be implemented in Detmold: `https://github.com/Edirom/cutImages`). The Figure shows an example for database structure.

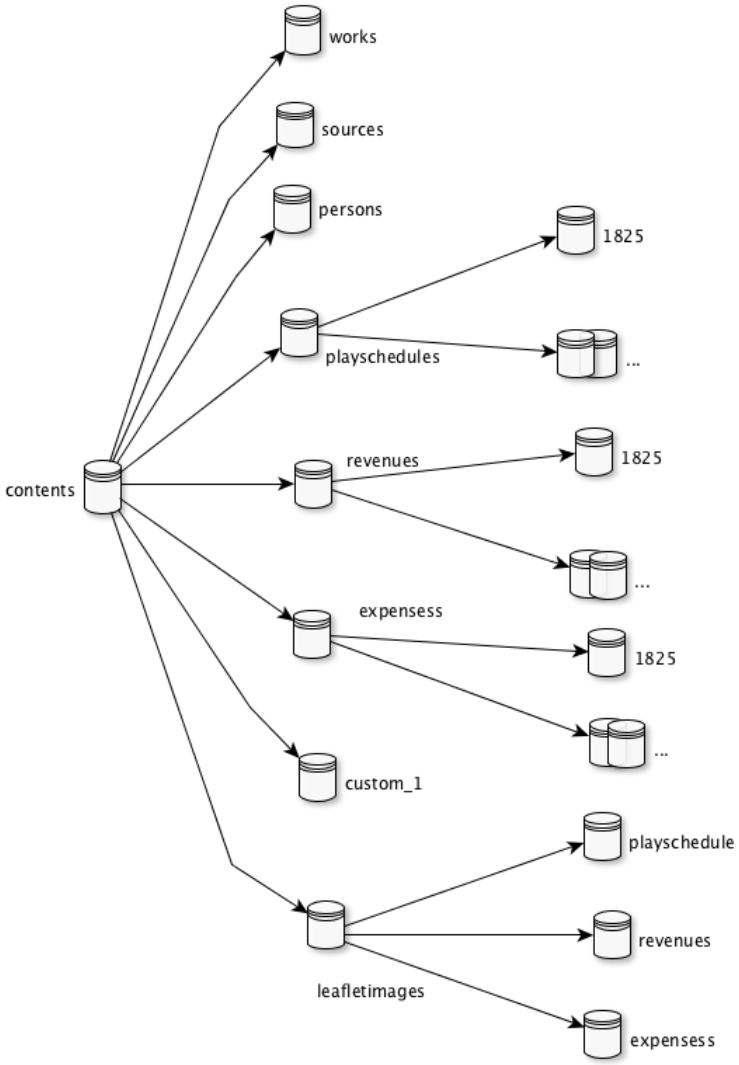

Figure 14: DB-Structure

5. Property-Files

A configuration file describe database structure and some project data for show information in GUI. File dbStricture.xml should be saved in xml-database in app/theater-data directory. Informations for key="custom" are saved as PDF or HTML other informations for defined entry-keys are saved as MEI or TEI. For details show an example configuration (`https://github.com/Detmolder-Hoftheater/TheatreTool_1-Dev`).

DB Structure File

<prefs>

```
<entries>
    <!--language: en = englishm de= deutsch-->
    <entry key="language" value="en"/>

    <!--Types of Navigation: "theatre", "other". For type "theatre"
        two items "Organization" and "Administration"-->
    <entry key="navigation_type" value="theatre"/>
    <entry key="name" value="Detmolder␣Hoftheater"/>
    <entry key="startyear" value="1825"/>
    <entry key="endyear" value="1875"/>

    <!--Database paths. For each path one item in navigation tree
        will be ganerated.-->
    <!--If one item will be not shown in GUI the value is value="".-->
    <!--Key words are not changeable.-->
    <!--For more details please show "Systems Design" in help menu in
        toolbar.-->
    <!--DB paths for repetoire item. For show repertoire work path
        must be exist, other paths are otpional.-->
    <entry key="works" value="theater-data-exs/works"/>
    <entry key="sources" value="theater-data-exs/sources"/>

    <!--Schedule paths are optional.-->
    <entry key="playschedule" value="theater-data-exs/spielplaene"/>
    <entry key="leafletimagesSchedule"
        value="theater-data-exs/leafletImages/spielplaene"/>

    <!--DB path for persons.-->
    <entry key="persons" value="theater-data-exs/persons"/>

    <!--DB path for revenue.-->
    <entry key="revenue" value="theater-data-exs/einnahmen"/>
    <entry key="leafletimagesRevenue"
        value="theater-data-exs/leafletImages/einnahmen"/>

    <!--DB path for expenses.-->
    <entry key="expenses" value="theater-data-exs/ausgaben"/>
    <entry key="leafletimagesExpenses"
        value="theater-data-exs/leafletImages/ausgaben"/>

    <!--Definition of one or more custom navigation items. Value is
        name for navigation item.-->
    <entry key="custom" value="Books"
        dbPath="theater-data-exs/info"/>
```

```
    </entries>
</prefs>
```

6. MEI and TEI Subsets

The GUI shows data that will be coded in MEI- or TEI-Format. Following structure for files will be support. For details show an example configuration (`https://github.com/Detmolder-Hoftheater/TheatreTool_1-Dev`).

6.1. Works

Works are coded in MEI format.

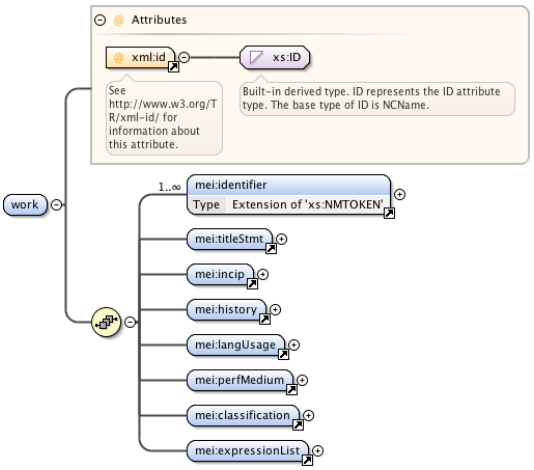

Figure 15: Subsets for works: overview

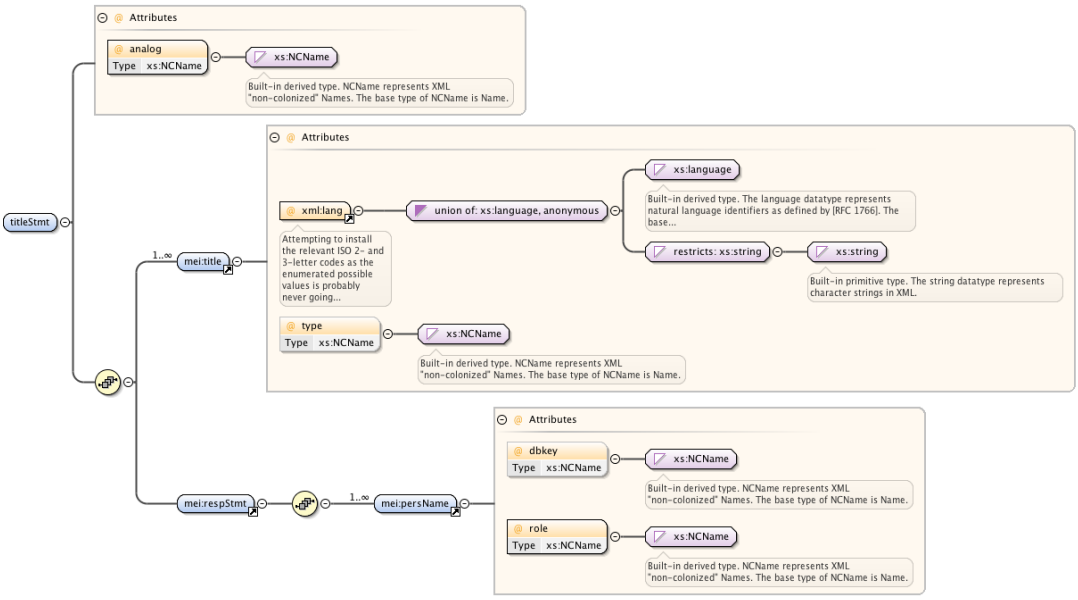

Figure 16: TitleStmt Block

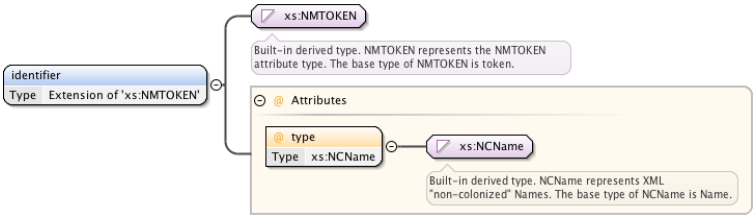

Figure 17: Identifier Block

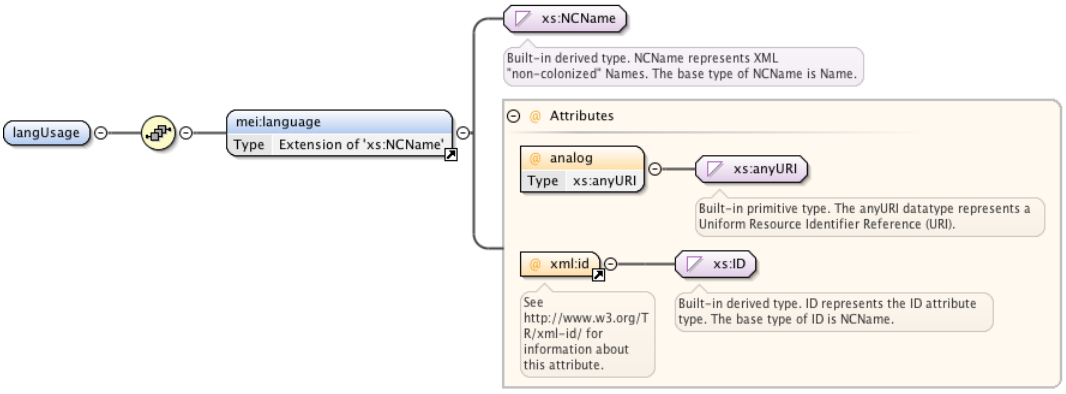

Figure 18: Language Block

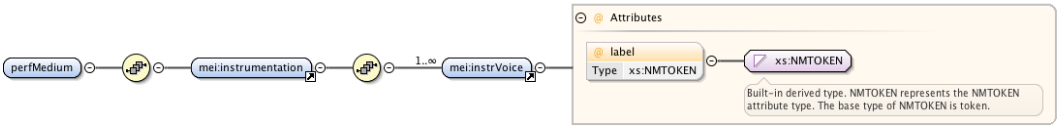

Figure 19: PerfMedium Block

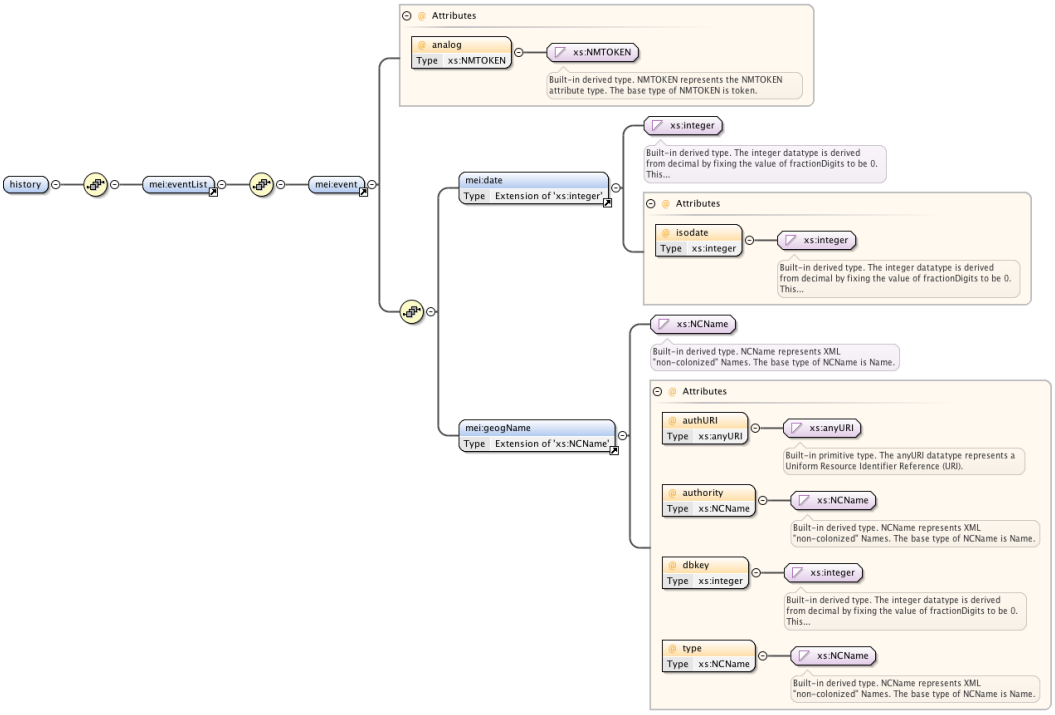

Figure 20: History Block

6.2. Sources

Sources are coded in MEI format.

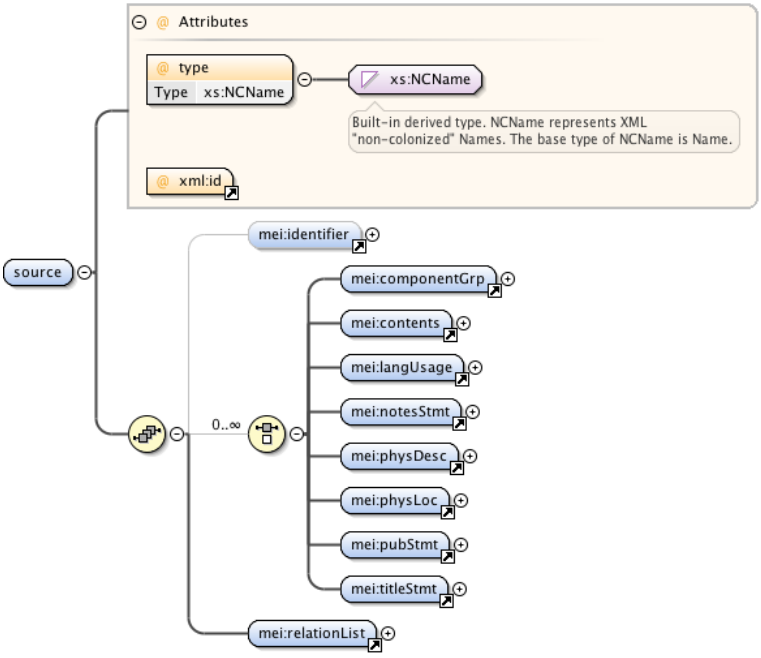

Figure 21: Sources: Overview

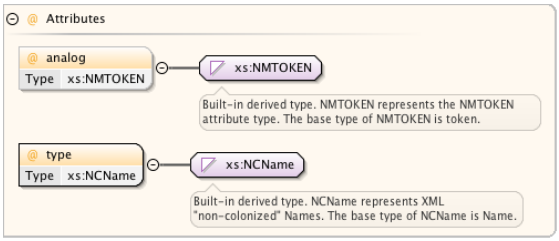

Figure 22: Sources: Attributes Block

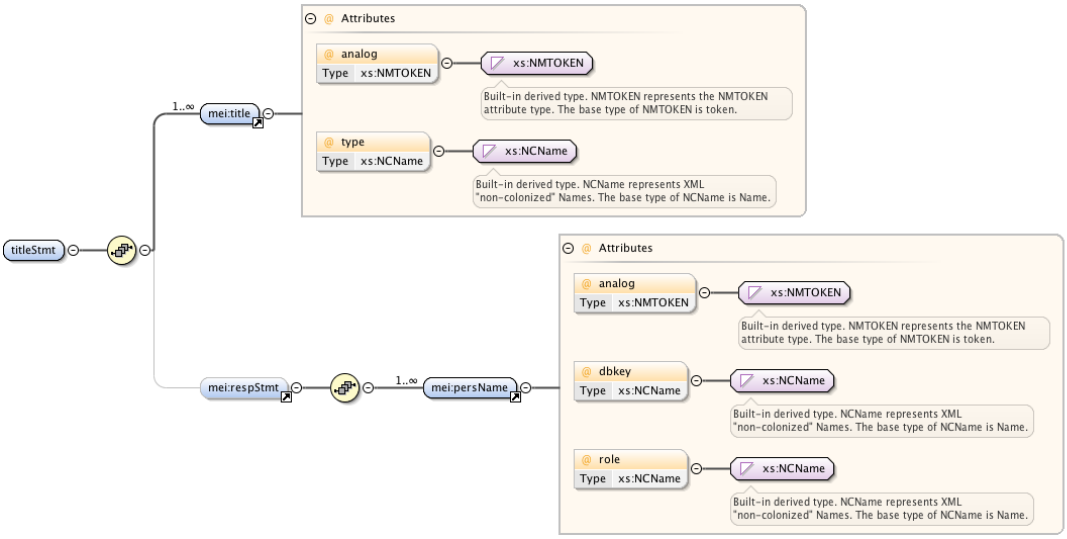

Figure 23: Sources: TitleStmt Block

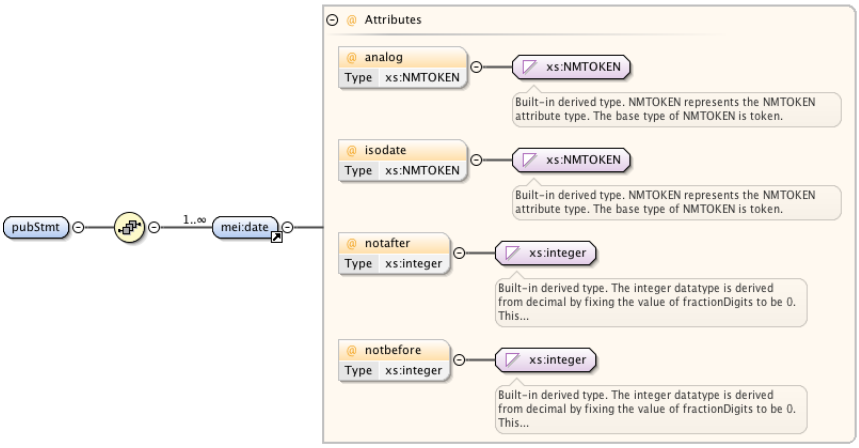

Figure 24: Sources: PubStmt Block

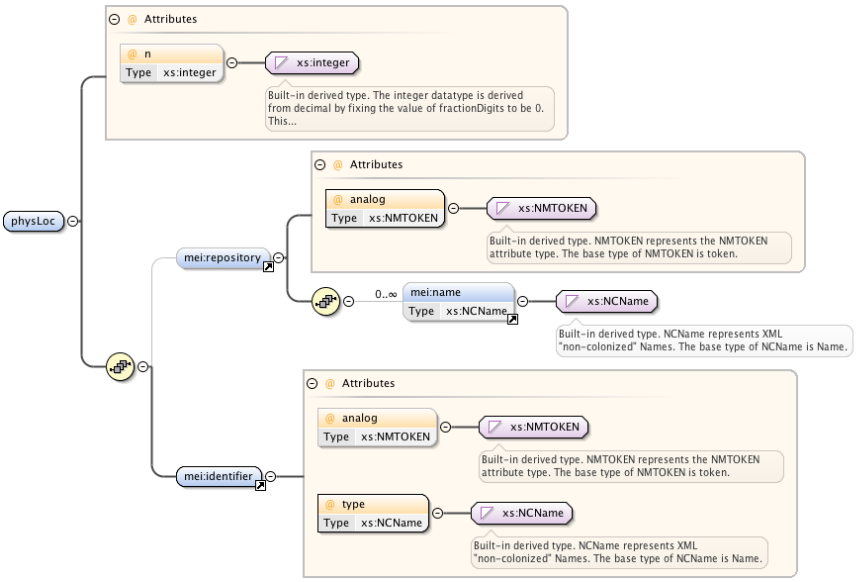

Figure 25: Sources: PhysLoc Block

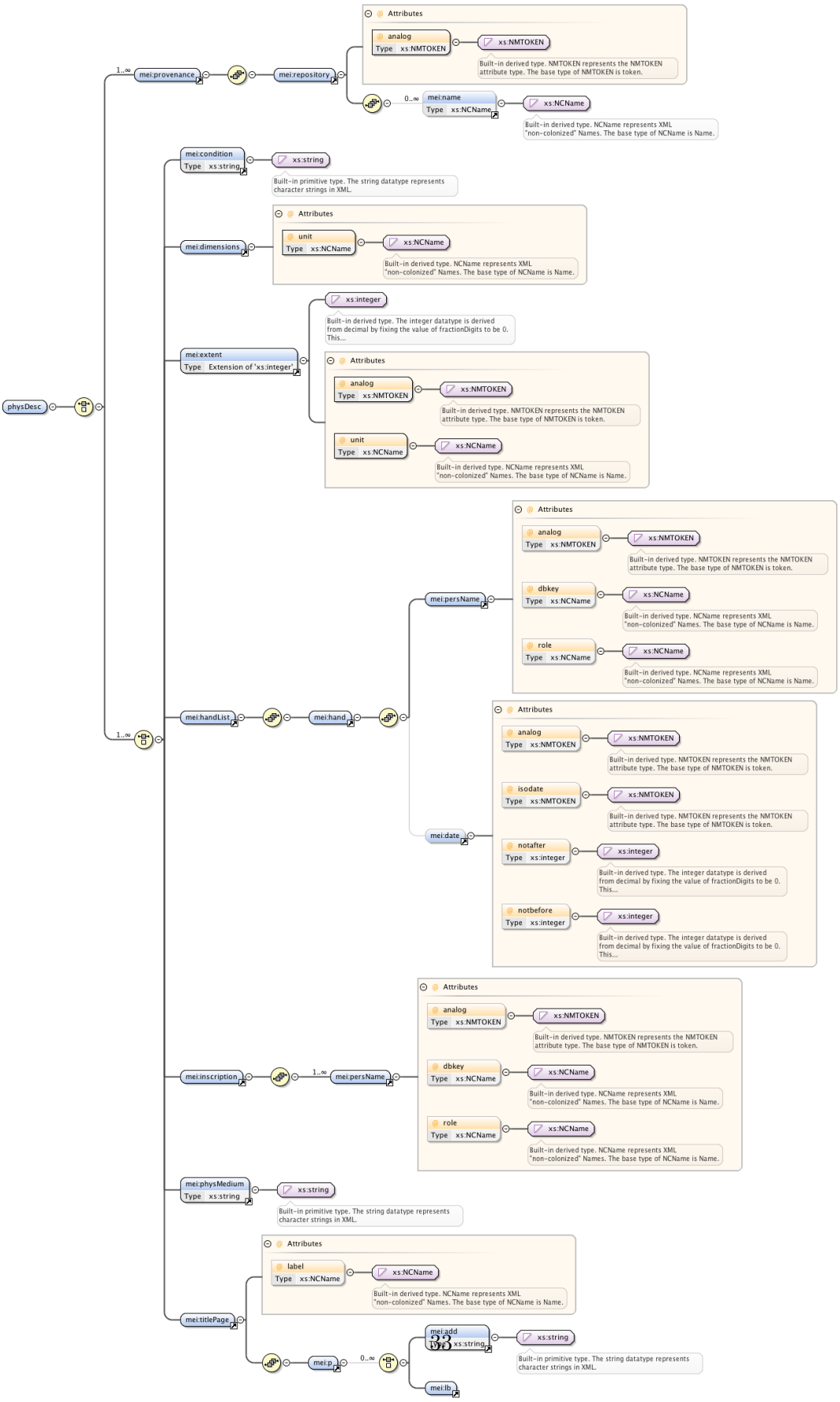

Figure 26: Sources: PhysDesc Block

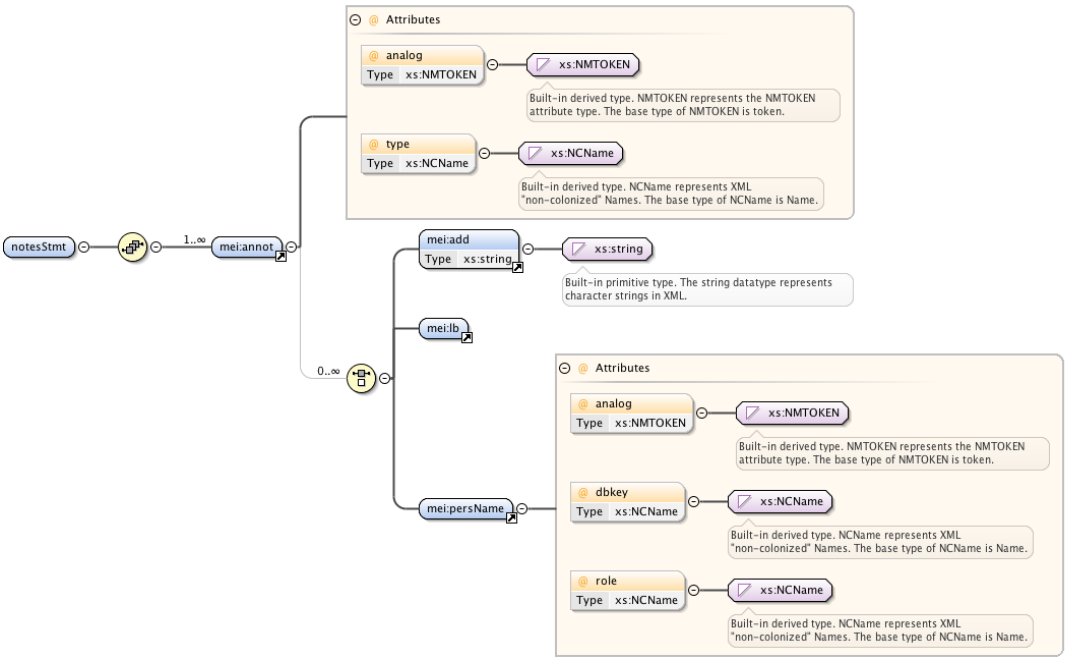

Figure 27: Sources: NotesStmt Block

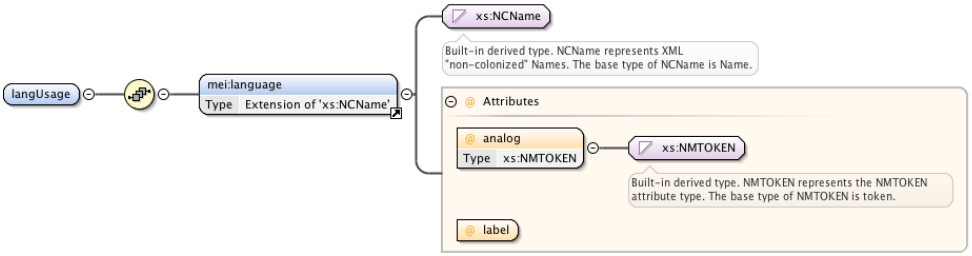

Figure 28: Sources: LangUsage Block

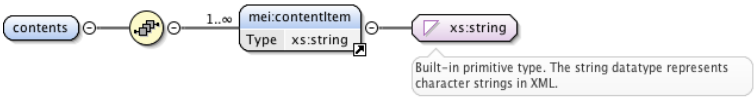

Figure 29: Sources: Contents Block

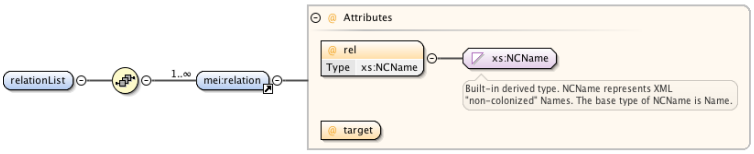

Figure 30: Sources: RelationList Block

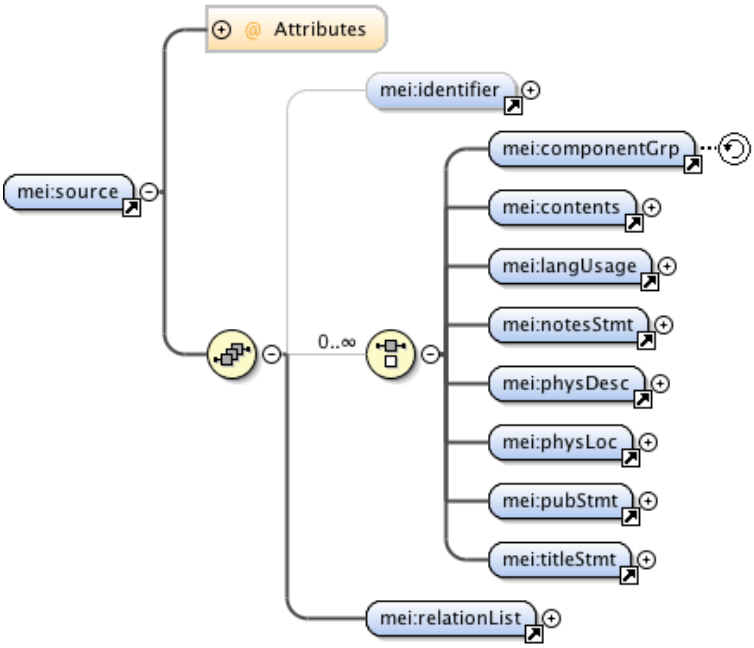

Figure 31: Sources: SIngle Source Block

6.3. Persons

Persons are coded in MEI format.

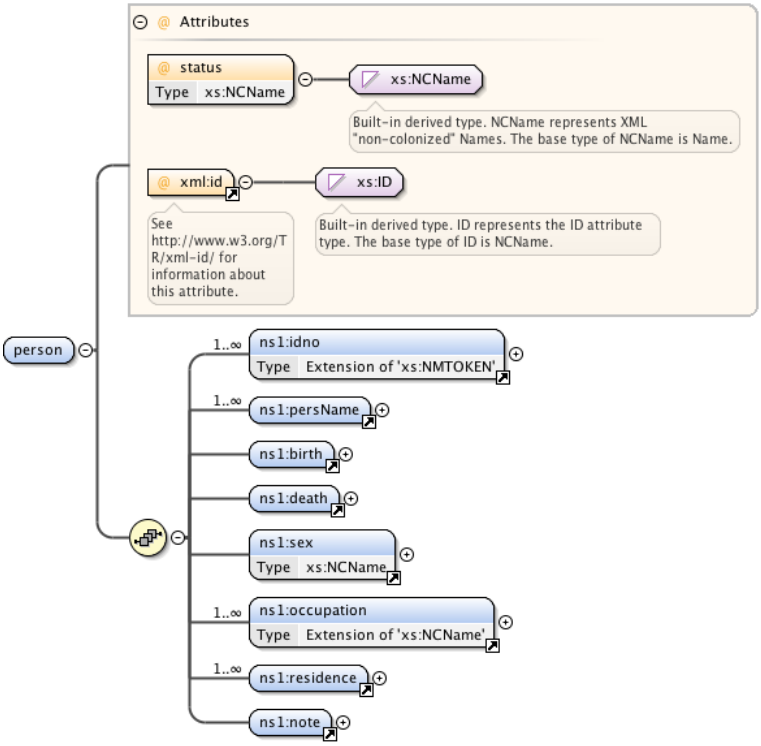

Figure 32: Persons: Overview

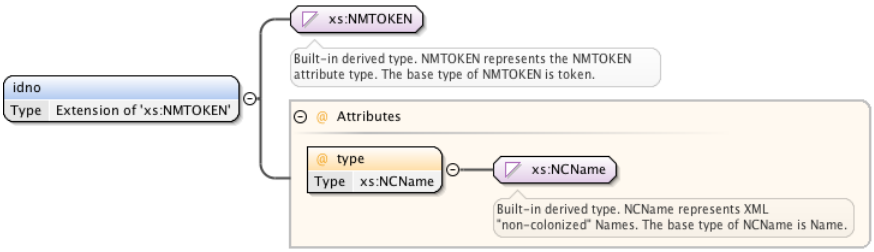

Figure 33: Persons: Idno Block

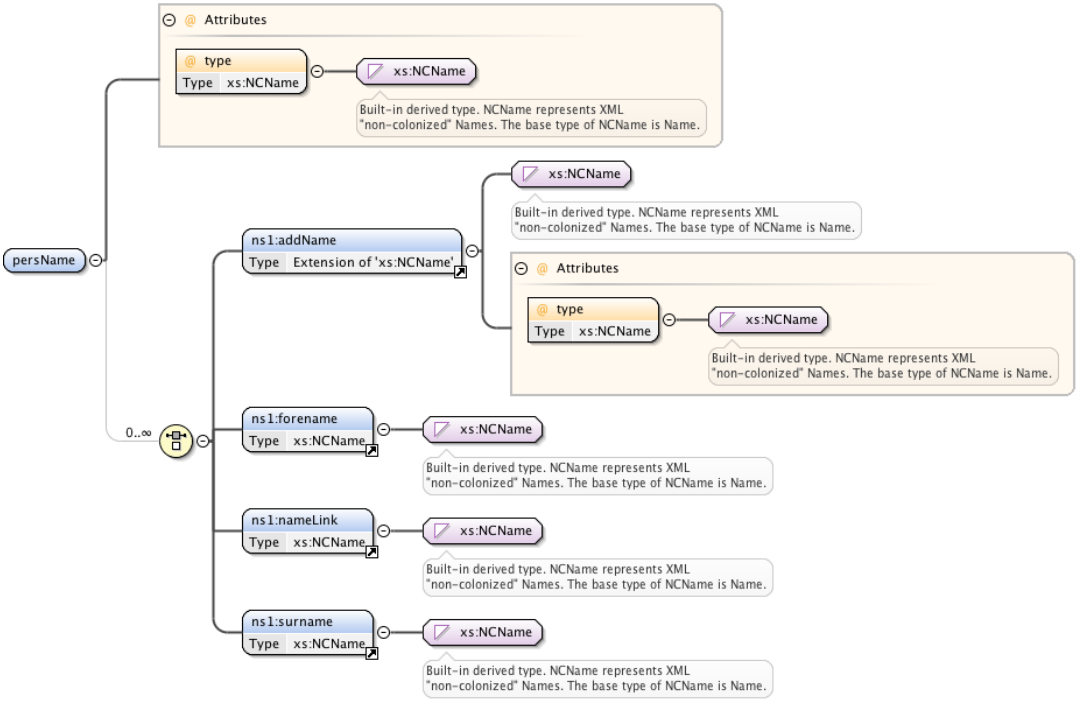

Figure 34: Persons: Name Block

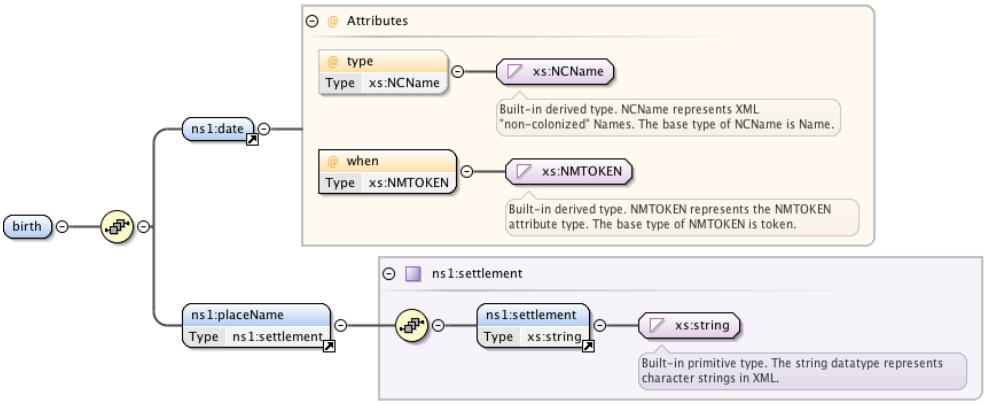

Figure 35: Persons: Birth Block

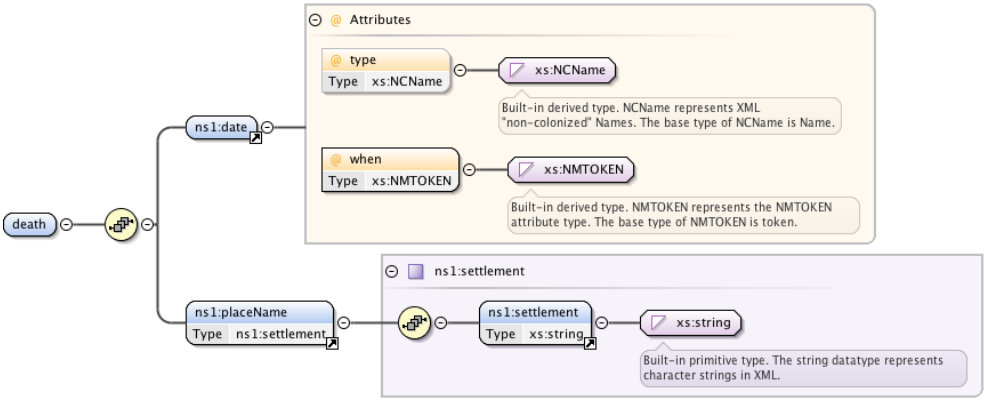

Figure 36: Persons: Death Block

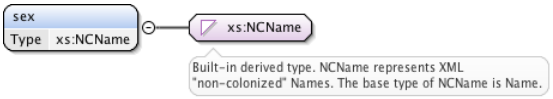

Figure 37: Persons: Gender Block

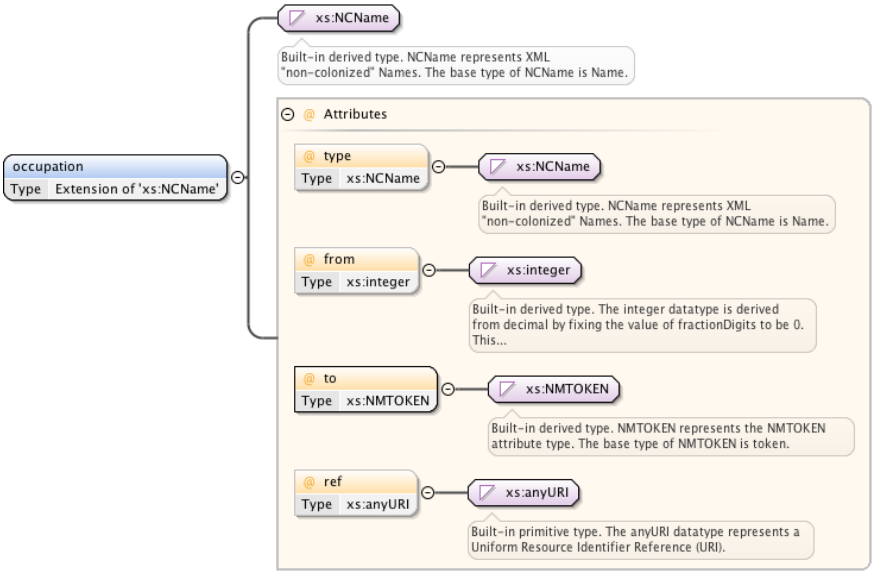

Figure 38: Persons: Occupation Block

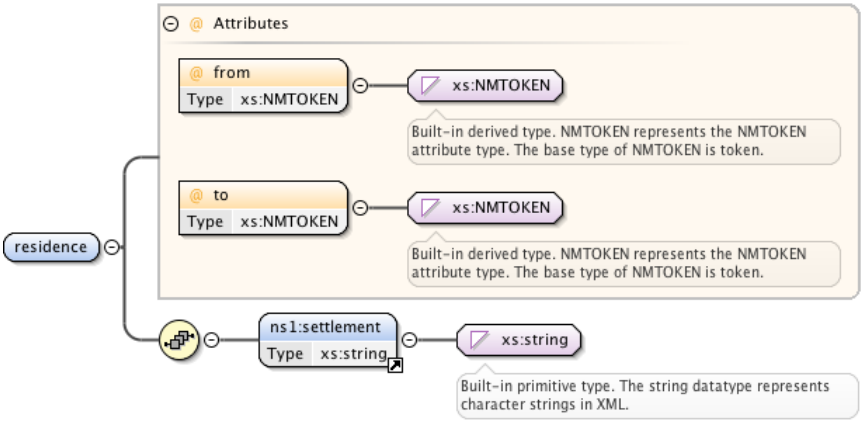

Figure 39: Persons: Residence Block

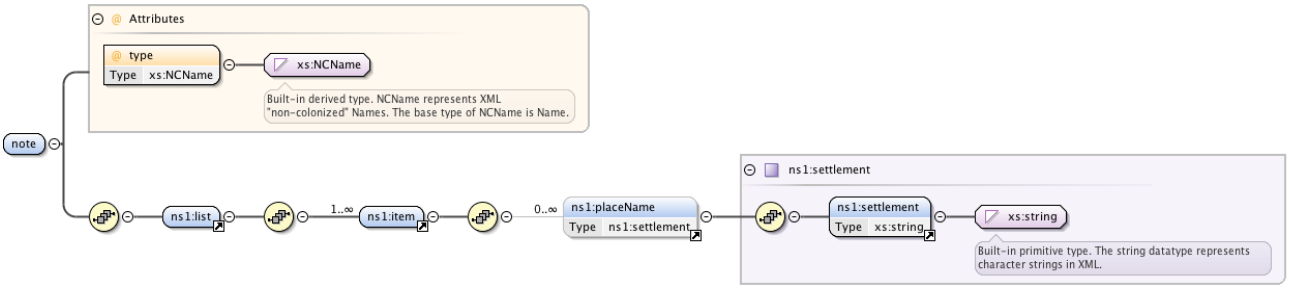

Figure 40: Persons: Note Block

6.4. Playscedules

Playscedules are coded in TEI format.

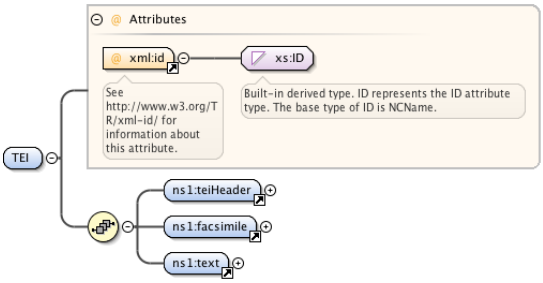

Figure 41: Playscedules: Overview

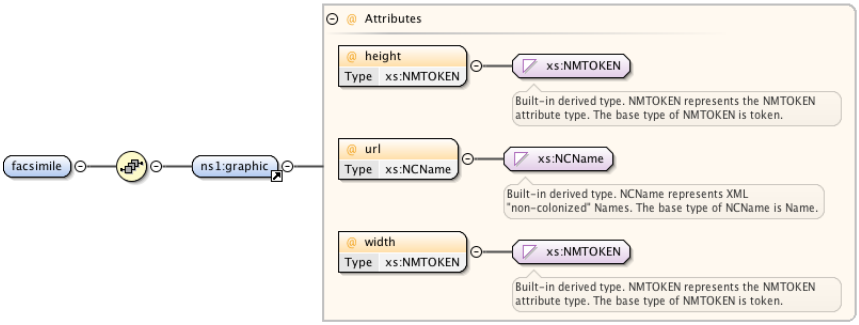

Figure 42: Playscedules: Facsimile Block

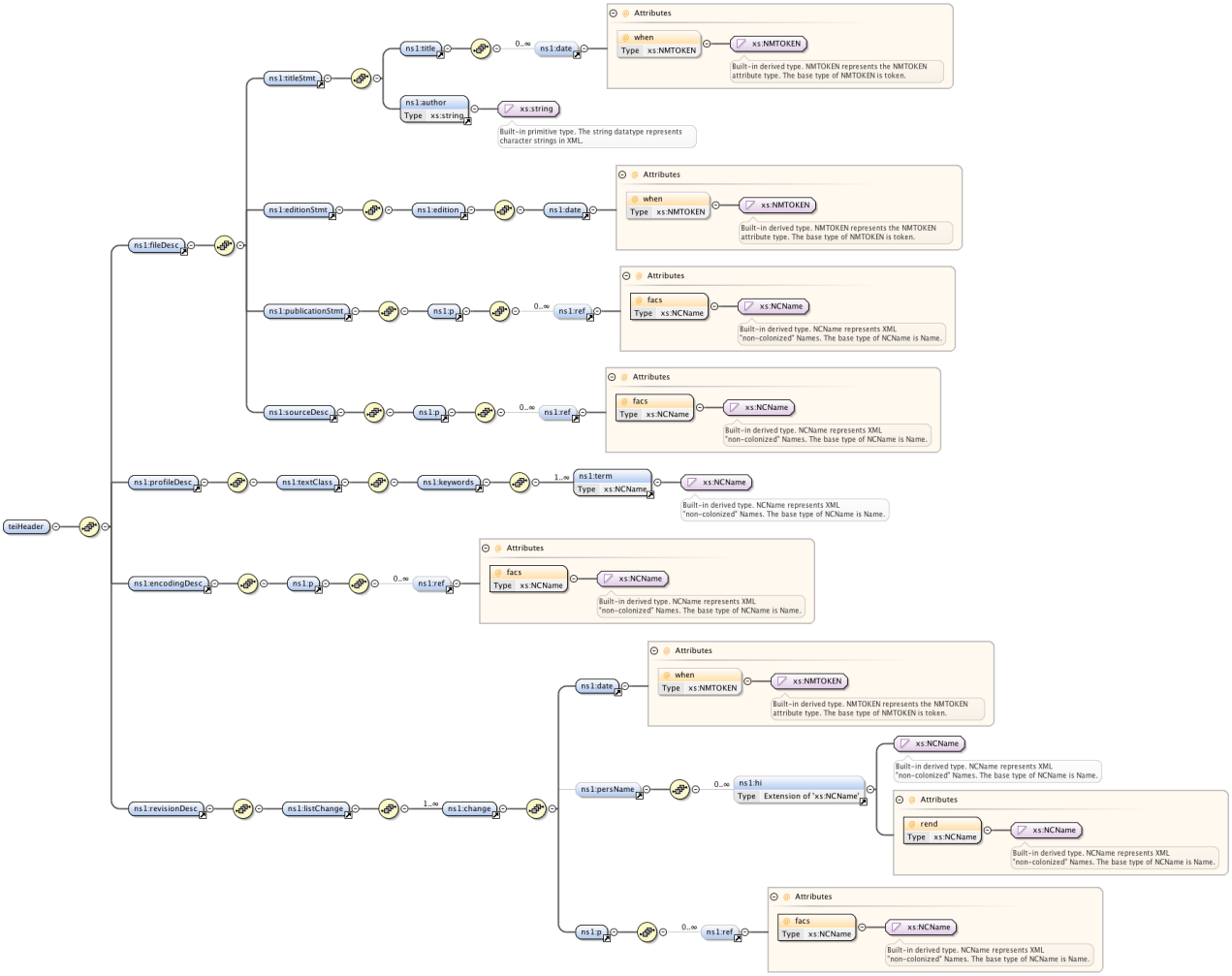

Figure 43: Playscedules: Header Block

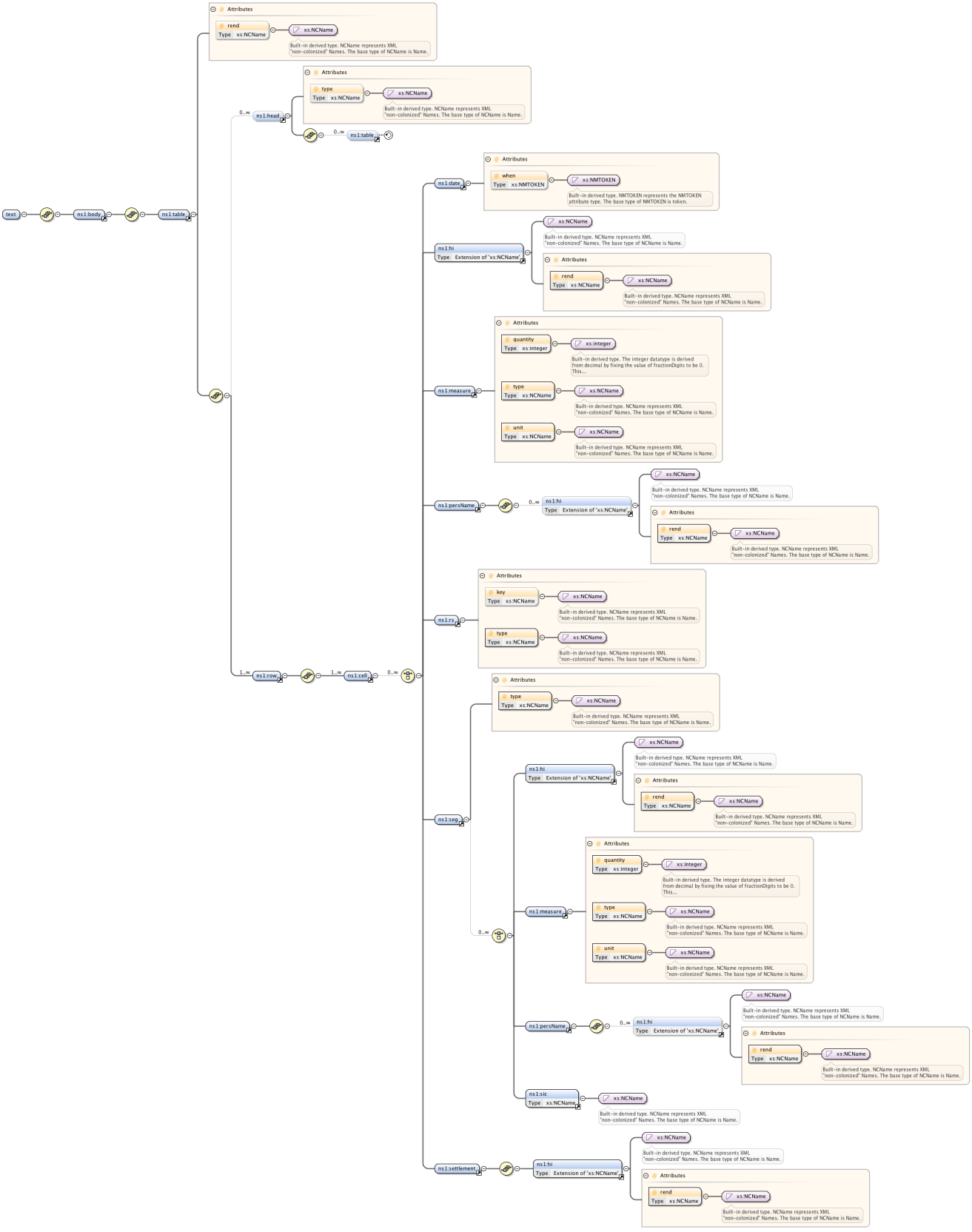

Figure 44: Playscedules: Text Block

6.5. Expensess

Expensess are coded in TEI format.

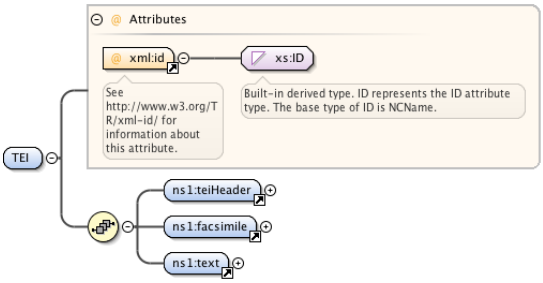

Figure 45: Playscedules: Overview

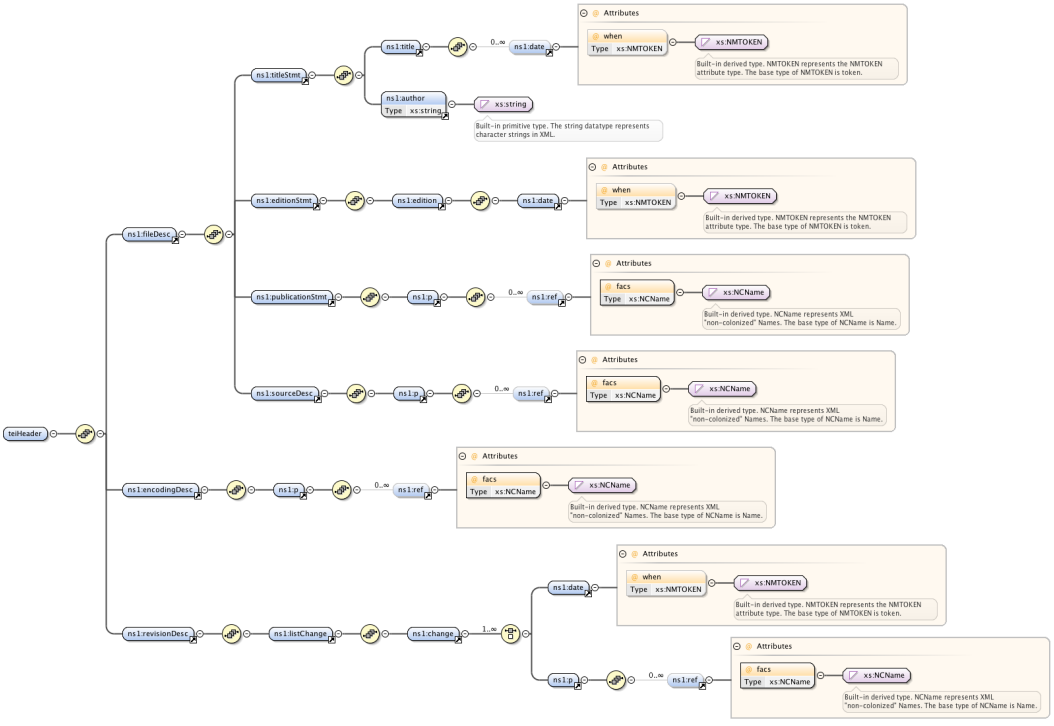

Figure 46: Expensess: Header Block

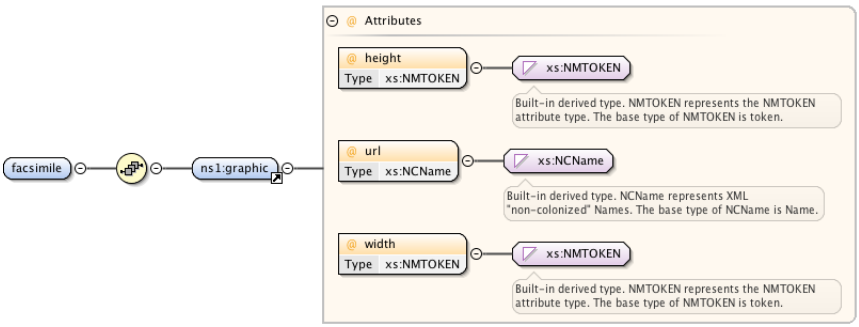

Figure 47: Expensess: Facsimile Block

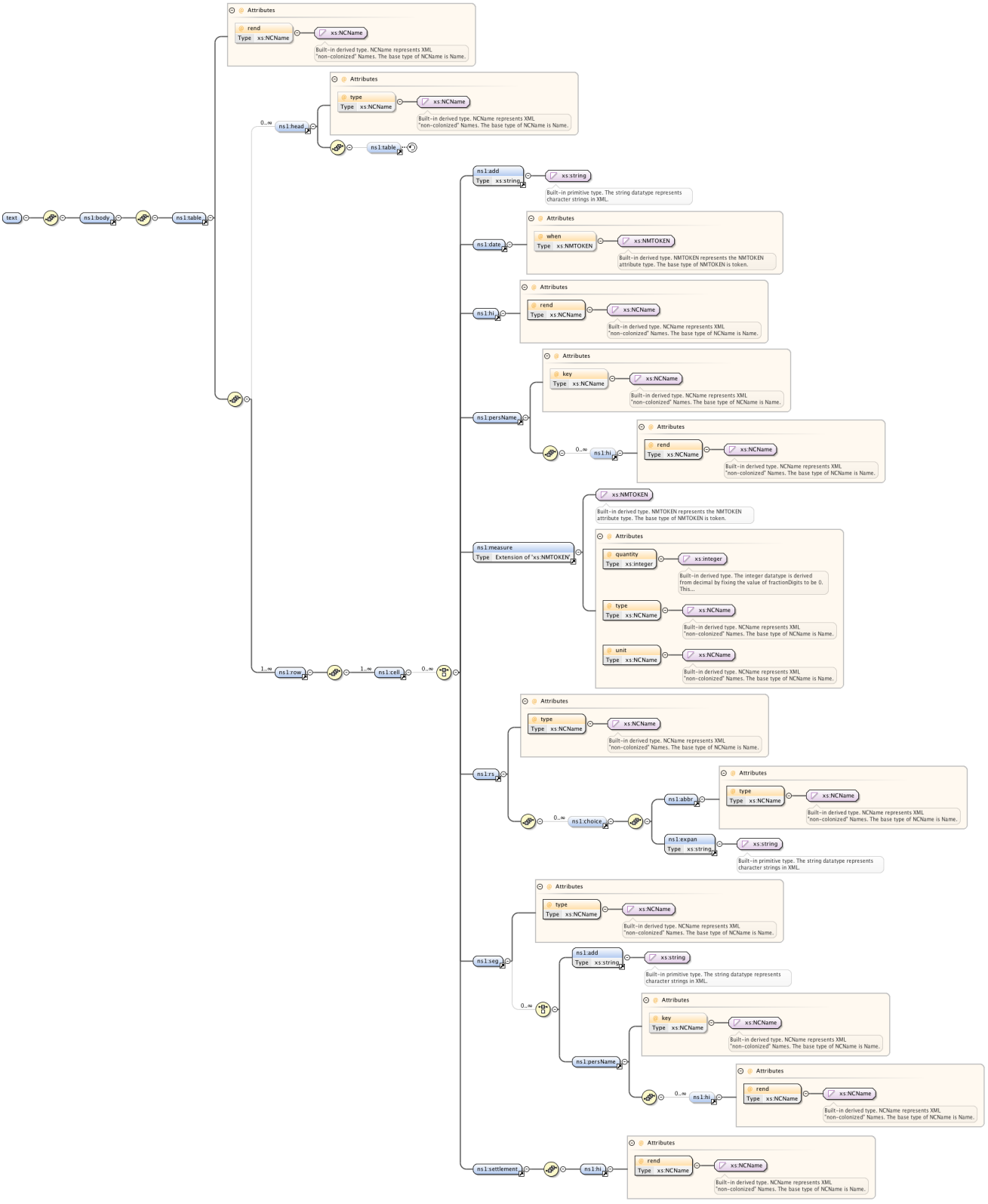

Figure 48: Expensess: Text Block

6.6. Revenues

Revenues are coded in TEI format.

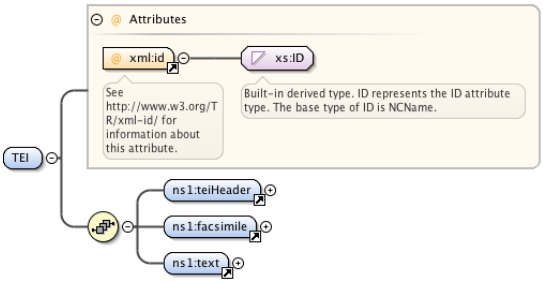

Figure 49: Revenues: Overview

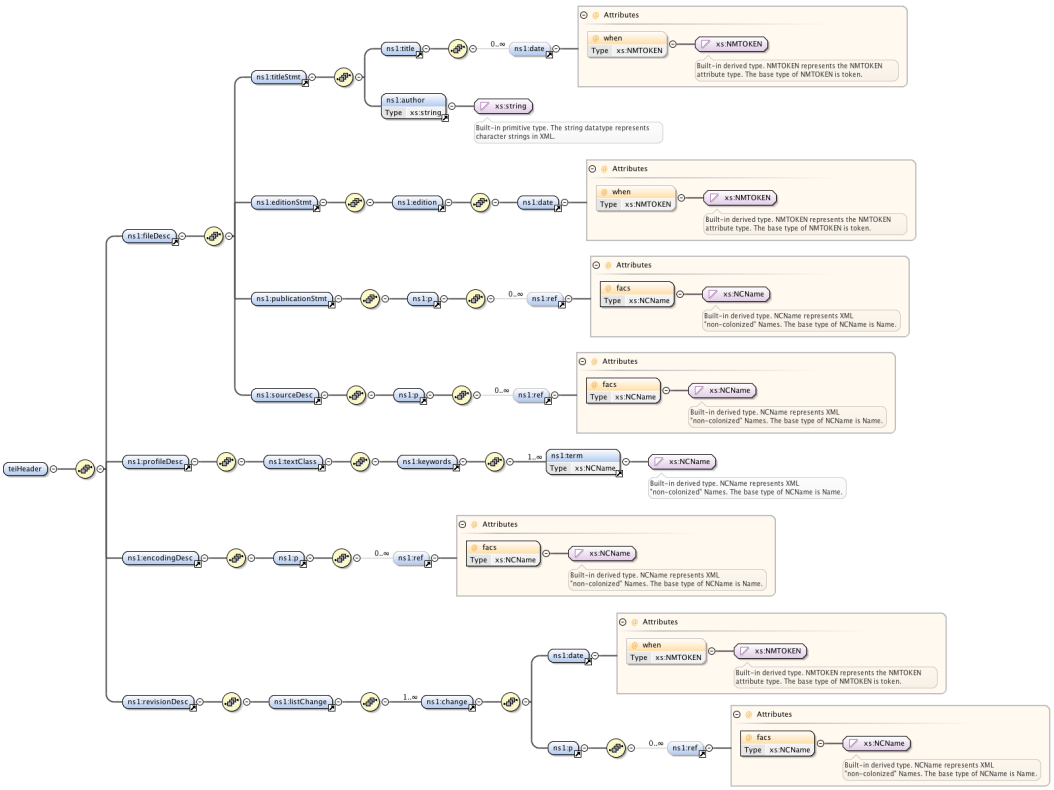

Figure 50: Revenues: Header Block

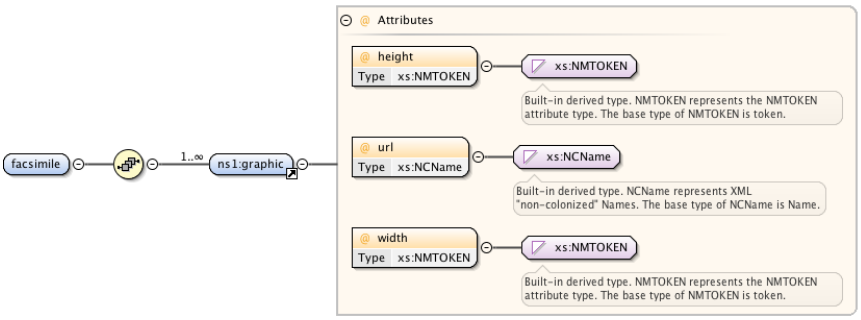

Figure 51: Revenues: Facsimile Block

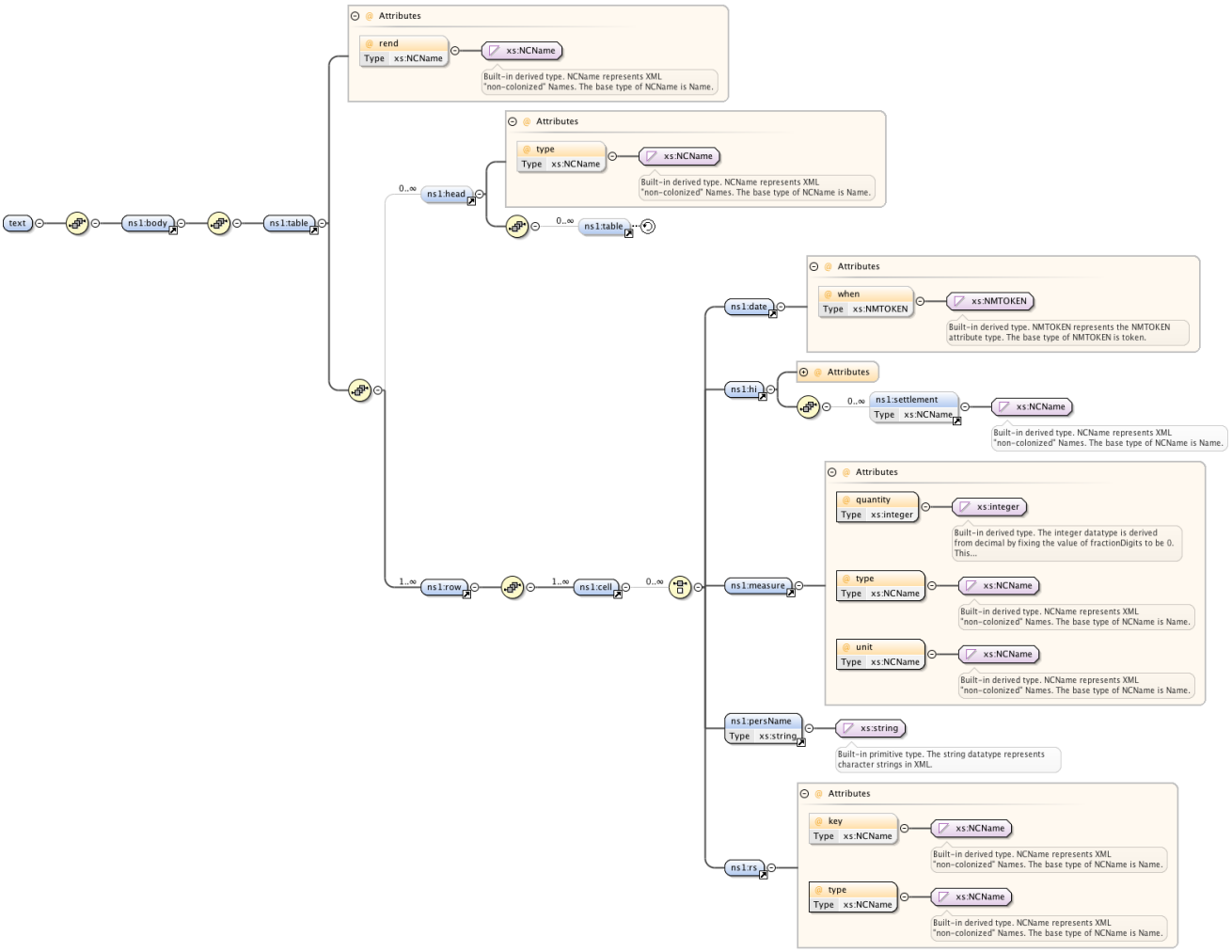

Figure 52: Revenues: Text Block

7. Relation-Diagram

Following diagram shows relations between objects. Objects are linked with id's and have direction only one direction. Exception is directions between works and sources. They have references in both directions. With dotted line are references that to be done.

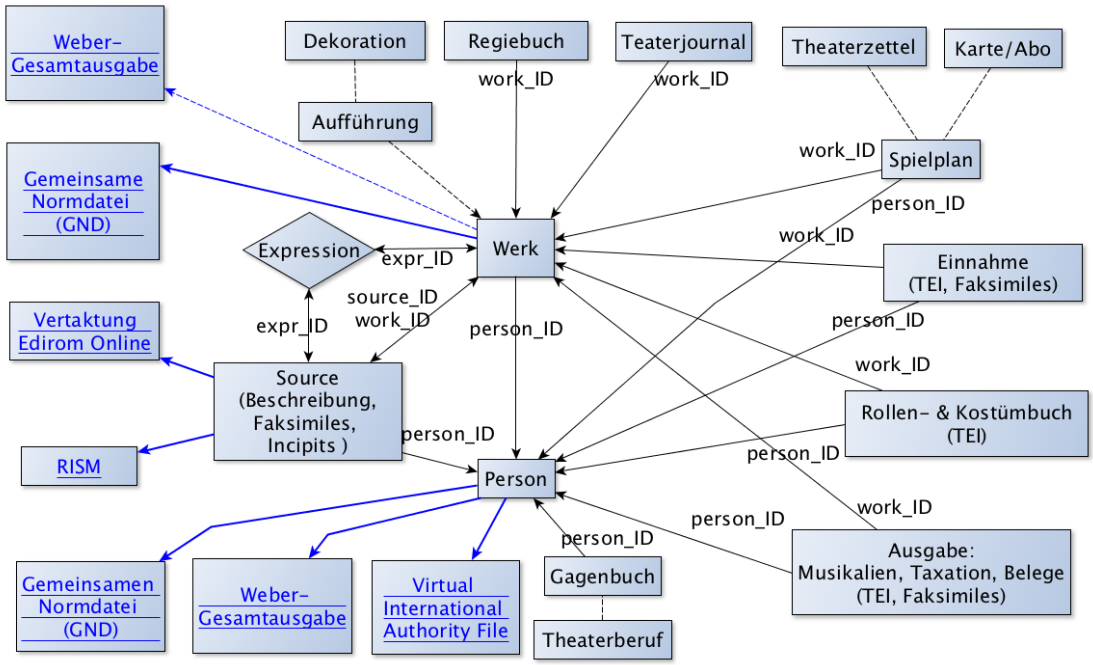

Figure 53: Relationdiagram

Part IV.
Process Design

8. getDBStructure.xql
9. getRevenueItems.xql
10. getExpensessItems.xql
11. getSchedulesItems.xql
12. getCustomItems.xql
13. getWorks.xql
14. getSource.xql
15. getMonthsForSelectedYear.xql
16. getScheduleTable.xql
17. getPersonsForSelection.xql
18. getPersonOverview.xql
19. getIssueNames.xql
20. getIssueTable.xql
21. getMonthsByRevenueYear.xql
22. getRevenueTable.xql
23. searchWorks.xql
24. searchPersons.xql