WP3 – Database and Portal (Re-)Design

DELIVERABLE 3.1
User stories (use cases)

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ABSTRACT

Creating an accurate, up to date and relevant depiction of the European research infrastructure landscape through the cataloguing of research infrastructures and the dissemination of the collected information is the main goal of the MERIL-2 project. Moving towards this goal is mostly served by providing online services to related stakeholders and to end users that need to be informed accordingly. Facilitating the needs of these user groups is a crucial aspect for the success of the MERIL-2 project. In order to identify the user activities and to translate them into system functionality, the MERIL-2 team has collected and documented a broad set of user stories, i.e. simple descriptions of user needs related to functions and to information. The current deliverable contains a comprehensive list of user stories accompanied by relevant information and structured according to specific rules dictated by software engineering principles. This collection is used as the basis for designing the MERIL-2 web platform and as a means to check if the system in hand conforms to the documented specifications. In terms of system implementation, the information provided in the current deliverable constitutes the initial phase of the software's life cycle.

1. Introduction: Identifying User Needs

The MERIL-2 web portal will be comprised by two distinct functional parts, the Portal itself (front end) and the Back Office (back end). These two facets of the MERIL-2 web platform will provide the processing components and information outlets to the broad community of users that the system will serve. The scope of the project dictates the diversity of users' groups and their role in the workflows that the system implements and the services it provides. These user groups have been already reported and their roles analyzed in the MERIL-2 deliverable D1.2[1]. Following the description of the user groups, the identification and the cataloguing of the user needs is the next crucial step for document the functional aspects of the MERIL-2 web platform. For this purpose the MERIL-2 team has chosen to describe the functionality at the business level with the usage of a collection of User Stories.

A User Story is a short informal description of a very specific user need in business terms, using non-technical language. Each User Story is produced by analyzing the business goals of the project in conjunction with the various characteristics of the user groups and the restrictions and requirements that the project's business context poses. In this deliverable the MERIL-2 team has collected and organized accordingly a number of User Stories as an initial step for the full description of the MERIL-2 web platform. Based on the Agile software development paradigm the User Stories are used to form a structured depiction of MERIL-2 web platform and to produce a basis that the implementation iterations will rely on and the implementation results will be checked against.

The deliverable is structured as follows. First we introduce the formal terms and the structure of the core analysis based on the Agile software development paradigm. The next chapter describes the methodology and the information sources used. The main body of the document is dealing with the presentation of the user stories and their usage in order to produce a description framework for the MERIL-2 web platform. The deliverable concludes with the conclusions that were drawn by the process of documenting the user stories.

2. Background

The Agile software development paradigm is a set of non-strict principles for software development that emphasize on and promote collaboration between the various teams that are involved throughout the development of a piece of software. These principles are described in the so called Agile Manifesto[2] and highlight the importance of:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Describing and document the functional requirements and drawing important insight from this collection remains an important activity in the Agile paradigm. One of the tools used for doing so is the identification of the User Stories. A user story is a short informal description of a very specific user need in business terms, using non-technical language. Each user story is produced by analyzing the business goals of the project in conjunction with the various characteristics of the user groups and the restrictions and requirements that the project's business context poses. User stories promote the communication between the business stakeholders and the development team early in the project's life cycle and emphasize on attaining a clear but not necessarily complete understanding of the goals and features as

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[1] D1.2 Management Agreement (29-04-2016)

[2] https://www.agilealliance.org/agile101/the-agile-manifesto/

soon as possible. The evolution of user stories is initiated through the Description of the various user stories, matures through the motivation of Conversation between the project's stakeholders and it concludes with the Confirmation that the objectives agreed through conversation have been achieved.

In order to confirm if what a user story describes has become a part of the software, all user stories are accompanied by a set of Acceptance Criteria. An acceptance criterion is a feature the system must provide that satisfies the need expressed in the user story. Similarly, an acceptance criterion doesn't have to be expressed with technical terms. Each user story can have a number of acceptance criteria but not too many because this is an indicator that the user story is broader than it should and must be broken down to smaller distinct user stories. Acceptance criteria should be compiled taken into consideration quality attributes, system efficiency and constraints, e.g. if the criterion is the prefilling of a web form then the form should be prefilled by the system in a reasonable amount of time.

Also, each user story should be accompanied by an importance indicator and flagged as critical or not. The importance indicator can be whatever is dimmed appropriate e.g. a numerical value between 1 and 5 or a simple label like "very important". This information is used by the implementation teams to prioritize the implementation tasks.

User stories can be grouped under a broader scope which is called an Epic. An Epic is a User Activity or Task which needs to be accomplished to do the work of the product, the large discrete sets of functionality which need to be delivered so as to be able to say we have solved the problem in hand. Examples of epics are Authenticate user, Create an RI entry, etc. Epics can be determined prior to the collection of the user stories by identifying high level business goals and/or after by organizing (cluster) the before unorganized user stories.

All user stories can be organized under each epic ranked by their importance indicator. Each epic with its user stories can be laid out in a single row showing the logical sequence and handoffs between the steps in the process or the order in which someone would describe activities to explain the behaviour of the system. This structure forms the Story Map, a 2D structure that horizontally describes the sequence of actions and vertically the importance of user stories. The sequence of epics does not have to be strict; epics that run in parallel can be put next to each other. The story map can be used to determine the set of user stories that if satisfied according to their acceptance criteria can form a fully functional system, but not a final one. This set is called the Minimum Viable Product.

Based on the aforementioned terms and tools, this deliverable documents various user stories, organizes them accordingly and provides a story map. This is done by first identifying the user groups of MERIL-2 web platform.

3. Methodology

Usually the documentation of user stories is a process that is initiated through consultations with stakeholders and a dialogue with the implementing team. In the case of MERIL-2 there are also other sources of information such as the MERIL advisory committee and experiences gathered during the previous phases of MERIL. We have divided these to four categories, existing documentation, hands-on experience, meetings and online questionnaires.

As MERIL-2 is the evolution of the previous MERIL project, some of the documents that describe its functionality were available. The document that was used from MERIL is the Book of Specifications (BoS)[3] created by Avendas AG (currently Thomson Reuters) which was the company that was assigned

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[3] Book-of-Specification for MERIL (BoS) (05-112-2011)

the contract for the implementation of the MERIL portal and back office. The document has been revised critically so as to identify the functionalities that are also going to be implemented in the MERIL-2 web platform.

A second document was the MERIL-2 deliverable D1.2[4]. In this deliverable ESF has documented, among others, the basic workflows for submitting information to the MERIL-2 web platform. These workflows describe the processes from the different perspectives of the various user groups that are responsible for providing, checking and publishing content. The same workflows were used for the identification of the main user groups.

As part of the preparation for the documentation of MERIL-2's data model, ESF created an early description of the data model by cataloguing the data fields that the current estimation regarding data concluded that are needed. This document was also used to collect information for user stories. Although the data model is not by itself a prime source of user stories since it focuses on the specification of data and not on user activities, one can derive information that can be used for envisioning possible functionalities. This is especially true for data fields that are new compared to the previous MERIL web platform.

Since the previous MERIL web platform is still an on-line production system, EKT was granted system configuration access. The team of developers of EKT has reviewed the various facets of the system by actually using and browsing the available tools and web pages. MERIL-2 will also share some features that the MERIL web platform already provides so by actually using these features one can draw useful conclusions regarding user needs.

Another source of information was the various meetings between the project's stakeholders. The most influential and the one that was actually organized for the purpose of collecting information and gain a better understanding regarding the current needs of the main user groups, was the MERIL National Data intermediaries Workshop that was held in Paris on May 11th and 12th. Through the various sessions and the diverse conversations that took place, the MERIL team documented a plethora of information some of which were used to produce user stories. Three group sessions were held, one related to MERIL's data needs in terms of what data are expected to be available for the end user, one related to the eligibility criteria for new RIs and the quality of information and one related to the functionalities of the new web portal. All three groups contributed on drawing solid conclusions regarding the business features of the provided services.

The NDI Meeting concluded with the MERIL Partner Meeting (on May 12th) where all MERIL partners participated. The discussion provided insight regarding some new features of MERIL-2 web platform and various ideas were suggested. Adopting a more pragmatic approach, the features that were discussed were analyzed in more detail taking into consideration feasibility in terms of data collection, time constraints and implementation difficulties.

An online questionnaire was also deployed[5] with the purpose of collecting information on specific questions mostly targeted to NDIs so as to let NDIs express their own needs and expectations regarding the new web platform. In Appendix A the reader can review the questions in the questionnaire. This survey is available until July 15th.

All previous information sources were used to compile an unstructured set of user stories. To better organize them and according to the Agile paradigm, the user groups were identified, the various epics

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[4] D1.2 Management Agreement (29-04-2016)
[5] http://surveys.ekt.gr/index.php?sid=88543

were established, acceptance criteria were assigned to all user stories along with importance indicators and a story map was created. Finally in order to obtain a high level of abstraction depiction of the user groups and main user activities, a UML Use Case diagram was created.

4. Results and discussion

The following chapters provide all information mentioned in the Methodology chapter.

4.1 Type of Users

MERIL-2 web platform will be used by the following user groups.

1. Simple User (not logged in user)
2. Policy Maker (Mac members, ESFRI, EC, Project Officers)
3. RI Coordinator
4. Researcher (Scientists)
5. System Administrator
6. NDIs
7. MERIL Data Manager (MERIL Coordinator)

Hereafter the term All Users will refer to the union of Simple Users and logged in users, regardless the role.

4.2 Epics

Each epic is accompanied by an ID that is also used to identify each user story. These IDs are also going to be used in the story map. The following epics have been identified:

1. Search RIs (Id: SRI)
2. Browse RIs (Id: BRI)
3. Provide help (Id: PH)
4. Review specific RI (Id: RSRI)
5. System tools (Id: ST)
6. Produce visualizations/reports (Id: PVR)
7. Data Curation (Id: DC)
8. Data Input (Id: DI)
9. Registration of new users (Id: RNU)
10. Export data (Id: ED)
11. Networking through social media (Id: NSM)

4.3 User Stories

All user stories are presented in a card like form, a description with an ID, an importance indicator, a flag for signify if the user story is critical or not and finally list of acceptance criteria. Also all user stories are grouped under the epic they belong to.

Search RIs (Id: SRI)

All users can do a text based search available throughout the application so as to be able to find RIs of his/her interest.		
Id: SRI1	Importance: High	Critical: Yes
Acceptance criteria:		

1. Given the fact that the search should be available throughout the application, a text field with an adjacent search button should be available in all pages.
2. Given the need to retrieve relevant RIs, when a user uses the search field, a page with a list of RIs that the system can correlate with the search terms is returned.
3. Given the fact that all users should have access to the search feature, when a user logs in this functionality should not change and should remain available throughout.

All users can refine the text based query for search to be able to express more complex queries.

Id: SRI2	Importance: High	Critical: Yes

Acceptance criteria:
1. Given a more complex query for a search, when the user needs to retrieve data based on this query he/she should be able to use logical expressions in the search text.

All users can do a category based search so as to be able to find RIs of his/her interest.

Id: SRI3	Importance: High	Critical: Yes

Acceptance criteria:
1. Given a set of different categorizations, when a user needs to reduce the number of results he/she can use any combination of the aforementioned categories with the search term.
2. Given the fact that any combination of categories can be used for searching, when a user needs a subset of categories he/she can choose the generic term "All" for the categories that will be not used.
3. Given the fact that a user might be only interested in searching by using only categories, the search term (text) should not be compulsory.
4. Given the fact that the full set of search features cannot be available throughout the application, there should be a specific page that contains all features. Other pages will only provide simple text based search.

All users can filter the results of a search (any kind of search) by using various filters in order to reduce the size of the result set and to increase the accuracy of the result.

Id: SRI4	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the need for facet browsing of the search results, the result page should provide to the user a set of filters appropriately displayed.
2. Given the fact that RIs belong to certain categories and have information that can be grouped, the filters in the result page should be structured accordingly.

3. Given the fact that a user will need to combine filters to further reduce the results, if the filters are categorized and provided in groups, the user should be able to choose filters from different categories at the same time.
4. Given the fact that the user might need to generalize his search, if a set of filters are chosen the user should be able to remove one or more filters from the set.

All users can sort the search results according to predefined criteria because a sorted list is easier to use and can provide added comparative information.

Id: SRI5	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the need for sorting the results of a search, the page should provide a set of sorting criteria to the user.
2. Given the fact that the user can filter the result set, when he/she sorts the results the filters should continue to apply.

All users can search for RIs and view the search results on a map in order to obtain a better understanding of the geographical distribution of the specific set of RIs.

Id: SRI6	Importance: High	Critical: Yes

Acceptance criteria:
1. Given a search result, the page will provide a link to a different page where the RIs of the result are displayed on a map.

Browse RIs (Id: BRI)

All users can find the latest additions to the system (new RIs or updated RIs) because he/she needs to be informed about new RIs.

Id: BRI1	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that the user will need to know the date of the last update, the page that provides latest additions information should also provide the actual dates.
2. Since the list of additions includes dates, the list should be sorted by date from newest to oldest.

NDI users can access a full list of RIs with entries from their countries (completed and draft RI entries) so as to obtain an overview of the stored information and to estimate the degree of completeness of the information in MERIL.

Id: BRI2	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this list is intended for NDI type users, when a user logs in and he/she is a NDI, then the appropriate UI component that leads to the aforementioned list will be displayed.

2. Given the fact that a NDI has one country declared in his profile, when he/she accesses this list only the RIs of that country are going to be displayed.
3. Given the fact that all users can search RIs based on country, the aforementioned list differs in that it also contains draft RI entries.

A MERIL Data Manager can access a list of all RIs that he/she has created so as to have in his/her disposal a tool to overview the related work that he/she has done.

Id: BRI3	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this list is intended for MERIL Data Manager users, when a user logs in and he/she happens to be a MERIL Data Manager, then the appropriate UI component that leads to the aforementioned list will be displayed.
2. Given the fact that the RIs that the MERIL Data Manager has created can be in any state through the RI's record life cycle, all entries related to the user should be displayed in the list accompanied by an appropriate identification referring to the state of the entry (draft, finalized, published or archived).

A MERIL Data Manager can access a list of all RIs that are archived in order to obtain a separate overview of the archived information in MERIL.

Id: BRI4	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this list is intended for MERIL Data Manager users, when a user logs in and he/she happens to be a MERIL Data Manager, then the appropriate UI component that leads to the aforementioned list will be displayed.

Logged in users can access a list of all RI entries (completed and draft RI entries) in order to obtain a comprehensive overview of data in MERIL.

Id: BRI5	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this list is intended mostly for Policy Makers users, when a user logs in and he/she happens to be a Policy Maker, then the appropriate UI component that leads to the aforementioned list will be displayed.

All users that have access to the various RI lists in the MERIL portal can sort the entries of the list according to predefined criteria because a sorted list is easier to use and can provide added comparative information

Id: BRI6	Importance: Medium	Critical: Yes

Acceptance criteria:

1. Given the need for sorting the entries of a list, the page should provide a set of sorting criteria to the user.

NDI and MAC members have access to a list that contains their assigned RIs (entry points) in order to verify the RIs status and to obtain an overview of the data completion level of RIs.		
Id: BRI7	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that this list is provided only to NDIs and MAC Members, when a user logs in then if his/her role is NDI or MAC Member an appropriate UI component that leads to the list will be displayed. 2. Given the fact that this list contains only the RIs assigned to the user, when the user logs in then the system will retrieve only the RIs that are assigned to the user. 3. Given the fact that the list contains only RIs that are not yet published, when the user logs in the system will retrieve only the draft entries.		

A MERIL Data Manager can access lists with all available data and all available fields in order to obtain a full depiction of information in MERIL.		
Id: BRI8	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that this list is intended for MERIL Data Manager users, when a user logs in and he/she happens to be a MERIL Data Manager, then the appropriate UI component that leads to the aforementioned lists will be displayed.		

NDI's can access a list that contains the RIs of his/her country that were recently updated in order to review his/her recent work on data.		
Id: BRI9	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that this list is intended for NDI users, when a user logs in and he/she happens to be a NDI, then the appropriate UI component that leads to the aforementioned lists will be displayed. 2. Given the fact that a NDI has one country declared in his profile, when he/she accesses this list only the RIs of that country are going to be displayed. 3. Given the fact that the list will contain only recently updated entries, it should contain draft entries that were edited in a specific recent time period.		

NDIs can sign up for email alerts about changes to the RIs of their country because he/she would need to stay informed about recent updates		
Id: BRI10	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that these alerts are related to countries, signing up should be done on pages that display RIs lists at the country level.
2. Given the fact that these alerts are addressed to NDIs, when a user logs in the system and happens to be an NDI, the appropriate UI component will be displayed.

Provide help (Id: PH)

Help pages for system functionality should be provided to all users to help them with the interaction with the system and promote usage.		
Id: PH1	Importance: Medium	Critical: No
Acceptance criteria:		
1. If the user browses a page that contains elements that the user can interact with, the page should also provide information on how these elements can be used.		

All users can be informed of the email address that they can use to send questions about the system or whatever is related to the MERIL-2 project so as to be informed accordingly.		
Id: PH2	Importance: High	Critical: Yes
Acceptance criteria:		
1. The designated email address and the needed informational text should be displayed on an appropriate part on the available content area.		

All users can be informed about the system and the MERIL-2 project in general through a separate Frequently Asked Questions page and User Guide document.		
Id: PH3	Importance: High	Critical: Yes
Acceptance criteria:		
1. Frequently Asked Questions page should be available to all users.		
2. A user guide document with detailed information should be available on the portal.		

Review specific RI (Id: RSRI)

All users can review all publicly available information of a RI in order to be informed accordingly.		
Id: RSRI1	Importance: High	Critical: Yes
Acceptance criteria:		
1. Since publicly available information will have been already identified, when a simple user browses an RI's page only the appropriate pieces of information will be displayed.		

A logged in user, depending on granted rights, can access specific pre-defined information about a RI that is not publicly available in order to be informed accordingly.

Id: RSRI2	Importance: Medium	Critical: Yes

Acceptance criteria:
1. Since publicly available information will have been already identified, when a logged in user browses an RI's page only the pieces of information corresponding to his/her role will be displayed.
2. Since different types of users might have been granted access to different types of information, when a user logs in, the system will provide only the information that is related to the user's role.

All users can access information regarding an RI that is organized and grouped thematically (i.e. the page is segmented into distinct parts based on grouping the available information) to facilitate his/her informational needs.

Id: RSRI3	Importance: High	Critical: Yes

Acceptance criteria:
1. Since groups of information will have been already identified, when a user browses an RI's page the information should be structured and presented accordingly.

Pre-defined categories (semantics) e.g. type, legal status, scientific domain, etc. that characterize an RI can be provided to all users to create a better understanding regarding the features of the RI in question.

Id: RSRI4	Importance: High	Critical: Yes

Acceptance criteria:
1. Since the various categories under which the RIs will be grouped will have been identified and thus RIs will have been characterized accordingly, when a user browses an RI's page these categories should be displayed separately.
2. Since some semantics will not be displayed to all users, when a user log in and depending on his/her role only the allowed semantics will be displayed.

All users can have access to geographical information about an RI since this kind of information is crucial in the context of MERIL.

Id: RSRI5	Importance: Medium	Critical: No

Acceptance criteria:
1. Spatial information should be provided in a form that is usable, useful and informative.
2. Since spatial information is a distinct category, the view page of the RI should provide this information in a distinct part of the available content area.
3. Since spatial information can be visualized if the data for the RI currently in display can pinpoint a place on a map, then a map should be also provided to the user.

The date of last update of an RI's data can be provided to all users so as to know if the data are up to date or not.

Id: RSRI6	Importance: High	Critical: Yes

Acceptance criteria:
1. Since the date of last update is a distinct piece of information, the view page of the RI should provide this information in a distinct part of the available content area.

All logged in users can sign up for email alerts about changes to the RIs because he/she would need to stay informed about RIs of his/her choosing.

Id: RSRI7	Importance: Medium	Critical: No

Acceptance criteria:
1. Given the fact that a user will want to stay informed about specific RIs, when he/she is presented with a list of RIs he/she should be able to choose from the list the RIs he/she wants to be informed about through email alerts.
2. Given the fact that a user will want to stay informed about specific RIs, when he/she is presented with a specific RI view page, he/she should be able to sign up for email alerts for this specific RI.

All logged in users can be informed of the latest updates regarding the RIs he/she has signed up for email alerts in a distinct section on a personal page. The user can choose if he/she wants to turn off email alerts and only be informed by this section by logging in.

Id: RSRI8	Importance: Medium	Critical: No

Acceptance criteria:
1. Given the fact that this information is going to be available only after log in, this page will only be available after login.
2. Given the fact that the user should be able to turn off email alerts and still be informed through this section, a suitable UI component for the disabling of email alerts should be available in this section (alongside with an explanatory text).

Similarly to the email alerts, all logged in users can choose to be informed about the latest updates of RIs through RSS feeds.

Id: RSRI9	Importance: Medium	Critical: No

Acceptance criteria:
1. Given the fact that this feature is related to RIs, an appropriate UI component will be available to users on the view pages of RIs.

All users can retrieve available the RI's access information because he/she would want to request access for that specific RI.

Id: RSRI10	Importance: Medium	Critical: No

Acceptance criteria:
1. Since access information is represented by a distinct set of data fields, when the user browses the view page of an RI, the access information should be presented in a distinct part of the available content area.

All users can export the publicly available information of individual RIs in a PDF file in order to have an offline hard copy and/or a file.

Id: RSRI11	Importance: Medium	Critical: No

Acceptance criteria:
1. All RI view pages should have an "Export to PDF" functionality provided to all users.

All logged in users can access forms of various types referring to a specific RI depending on the user role.

Id: RSRI12	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this functionality is closely related to the type of user, when a user is logged in the appropriate UI component (e.g. edit button, delete button, etc) should be displayed in the RI's view page.
2. Given the fact that this functionality is closely related to the type of user, when a user is logged in and he/she opens the RI's form, the appropriate data related to the RI and the user role should be prefilled.

An NDI can provide feedback regarding an RI back to the MERIL back office in order to inform the MERIL team about issues that are related to a specific RI.

Id: RSRI13	Importance: Medium	Critical: Yes

Acceptance criteria:
1. Given the fact that it is not possible to foresee exactly what is the nature of the information that the NDI will want to provide, each RI view page should have a free text field that the NDI can use for providing feedback.
2. This UI component should be available only to NDIs after log in.
3. Given the fact that a NDI can provide feedback at any given time, whenever he/she uses this feature an automated email alert will be send back to the MERIL Data Manager.

A MERIL Data Manager and an NDI can review the previous values of changed fields of a specific RI in order to review the RI entry in its previous form.

Id: RSRI14	Importance: Medium	Critical: Yes

Acceptance criteria:

1. Given the fact that the user should be able to differentiate the previous to the current values of fields, both values should be displayed appropriately.

System tools (Id: ST)

System Administrator users and the MERIL Data Manager have access to the full list of MERIL's users in order to have an overview of the users and their data.		
Id: ST1	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that users can be different in a variety of ways (e.g. user, name, country, etc) the full list should provide some of the data to the System Administrator.		

System Administrator users and the MERIL Data Manager have access to users view pages in order to have a complete overview of each user's data.		
Id: ST2	Importance: High	Critical: Yes
Acceptance criteria: 1. The system should provide all user data in a single view page.		

System Administrator users and the MERIL Data Manager have access to users web forms in order to be able to edit/delete user data or user records altogether.		
Id: ST3	Importance: High	Critical: Yes
Acceptance criteria: 1. The system should provide a form prefilled with all available user data.		

System Administrator users and the MERIL Data Manager can create a new user.		
Id: ST4	Importance: High	Critical: Yes

Acceptance criteria:
    1. The system should provide a suitable form for the creation of a new user.
    2. Given the fact that NDI users represent their own countries, when the System Administrator or the MERIL Data Manager creates a new NDI user, he/she can choose the NDI's provider country.
    3. Given the fact that RI Coordinator users represent one or more RIs, when the System Administrator or the MERIL Data Manager create a new RI Coordinator user, he/she can choose the RI(s) and "attach" it/them to the RI Coordinator profile.		

System Administrator users and the MERIL Data Manager are provided with usage statistics (e.g. how often certain objects are viewed, how often certain functionality is used, etc) in order to form a better understanding regarding the actual usage of the system.		
Id: ST5	Importance: Medium	Critical: No

Acceptance criteria:
1. Given the fact that there might be a number of relevant and interesting user statistics, the system should provide this information on a separate page.
2. Given the fact that this feature should be available only to system administrators, when a system administrator is logged in a link to the users statistics page should be available to the user.

System Administrator users can use various system tools e.g. indexing search database, changing system parameters, changing UI components, etc.

Id: ST6	Importance: High	Critical: Yes

Acceptance criteria:
1. The system should provide all system tools to System Administrators only.

System Administrator users and the MERIL Data Manager can import data in bulk per country depending on the availability, format and structure of the data that each country can provide.

Id: ST7	Importance: Medium	Critical: No

Acceptance criteria:
1. Given the fact that the system will provide an import functionality that is specific to a certain type of data file (e.g. XML), if the file that is being used is not suitable for importing, the system should alert the user for this fact.
2. Given the fact that data in the source file can be erroneous or can be already stored in the database, during import all appropriate checks should take place and after the import process completes a suitable report should be provided to the user.
3. Given the fact that the provided data should be checked prior of being published, all new entries should be set to draft mode.

A MERIL Data manager can assign RIs (entry points) to Policy Makers and RI Coordinators so as the latter will have access to lists with assigned RIs.

Id: ST8	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that the assignment of RIs will be done on the user's profile edit page, the page should provide a list with all available RIs.
2. Given the fact that the assignment of RIs is intended for Policy Makers and RI Coordinators, when the MERIL Data Manager chooses these roles for the user, the list of RIs should appear on the form.
3. Given the fact that each Policy Maker can be interested in multiple RIs, the MERIL Data Manager should be able to choose multiple RIs for assignment.
4. Given the fact that each RI Coordinator is related to a single RI, the MERIL Data Manager should be able to choose a single RI for assignment.

A MERIL Data manager can assign countries to NDIs so as the latter will have access to lists with assigned RIs.

Id: ST9	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that the assignment of countries will be done on the user's profile edit page, the page should provide a list with all countries.
2. Given the fact that the assignment of countries is intended for NDIs, when the MERIL Data Manager chooses this role for the user, the list of countries should appear on the form.
3. Given the fact that each NDI is related to a country, the MERIL Data Manager should be able to choose a single country for assignment.
4. Given the fact that country assignment corresponds to the country's RIs to the user, when the MERIL Data Manager chooses a country all RIs related to this country should be assigned to the user.

A MERIL Data manager and System Administrator can change the static text of predefined parts in predefined pages so as to change partly the content of these pages.

Id: ST10	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that these changes should be done in the back office, suitable web forms should be available to the MERIL Data Manager.

A MERIL Data manager can monitor the progress of completion of all RI entries by means of a progress bar (0-100% completion, 100% completion = finalized).

Id: ST11	Importance: High	Critical: Yes

Acceptance criteria:
1. MERIL data manager should be able to have an overview of the data completion level in in % for each RI data as to monitor the progress and visualise which entries are close to be completed.

Produce visualizations/reports (Id: PVR)

When a logged in user has in mind a specific question regarding structured information about RIs, he/she can create a visualization that depicts the answer of this question.

Id: PVR1	Importance: Medium	Critical: Yes

Acceptance criteria:
1. Given the fact that logged in user may have complex informational needs, the system should provide a processing unit (UI components) that can be used to express complex queries.
2. Given the fact that the result of the queries will be visualized, the result data should be structured in a form that can support visualizations.

3. Given the fact that each user will have access to a specific subset of data based on data permissions, the provided visualizations should also reflect these restrictions.

When a logged in user has in mind a specific question regarding structured information about RIs, he/she can create a report that contains the answer of this question in an organized form and export it as a spreadsheet file or PDF file.

Id: PVR2	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that policy makers can have complex informational needs, the system should provide a processing unit (UI components) that can be used to express complex queries.
2. Given the fact that the result of the queries will be provided as a report, the result data should be structured in a form that can support reports.
3. Given the fact that each user will have access to a specific subset of data based on data permissions, the provided reports should also reflect these restrictions.

All users have access to pre-defined visualizations with publicly available information.

Id: PVR3	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that visualizations occupy a significant amount of page space, they should be displayed on appropriate pages and taking into consideration aesthetics and page usability.
2. Given the fact that data will change frequently, all visualizations should be produced dynamically whenever the user browses the page that displays them.

Logged in users may have access to additional visualizations with information that is provided to registered users according to their role.

Id: PVR4	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that visualizations occupy a significant amount of page space, they should be displayed on appropriate pages and taking into consideration aesthetics and page usability.
2. Given the fact that some visualizations should be available to logged in users only, when a user logs in and if he/she has the appropriate role, specific UI components that provide access to these visualizations will be displayed.
3. Given the fact that data will change frequently, all visualizations should be produced dynamically whenever the user browses the page that displays them.

Data Curation (Id: DC)

A MERIL Data Manager is able to review data entered by users through free text fields prior to making this information publicly available because free text information cannot be semantically checked by the system.		
Id: DC1	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that there will be various free text fields throughout MERIL online forms, when new data are entered the MERIL Data Manager should be informed for this fact and review before it is published. 2. Given the fact that free text fields can be used in tandem with controlled vocabularies, when new data are entered the MERIL Data Manager should be able to separate between data produced through free text fields and data that came from a controlled vocabulary. 3. Given the fact that information produced by free text fields can be erroneous, the MERIL Data Manager should be able to make corrections or discard the information altogether.		

A MERIL Data Manager is able to update the list of National Roadmaps in order for the system to provide up-to-date relative information to users.		
Id: DC2	Importance: Medium	Critical: Yes
Acceptance criteria: 1. Given a specific source of information for national roadmaps, the system should provide to the MERIL Data Manager an appropriate form to CRUD (create, read, update and delete) information about national roadmaps.		

A MERIL Data Manager is able to review and edit all available information of RIs so as to make corrections and additions whenever is deemed necessary.		
Id: DC3	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that an RI can be edited through its web form, a MERIL Data Manager should have access to these forms.		

A MERIL Data Manager is able to access a list that contains registration applications and grant access to users that comply with the criteria for a MERIL user.		
Id: DC4	Importance: High	Critical: Yes
Acceptance criteria: 1. Given the fact that the registration form that candidate users will use, will include a set of fields, this information should be available through a dedicated web page to the MERIL Data Manager. 2. Given the fact that a user should have login credentials (user name and password), the MERIL Data Manager should be able to chose the credentials and store them along with the user's data.		

3. Given the fact that upon approval of a user's registration application the user should be informed for the fact, the system should send an email containing the login credentials to the appropriate email address.

Data Input (Id: DI)

A NDI can inform the MERIL team (MERIL Data manager) that an RI should be entered into the database, providing at the same time the name and email address of a contact person.

Id: DI1	Importance: High	Critical: No

Acceptance criteria:
1. Given the fact that this communication must be supported by the portal, the appropriate web form must be available.
2. Given the fact that this action is the initial step for the creation of a RI entry, the aforementioned from should provide all necessary fields with a small number of them being compulsory.
3. Given the fact that this feature is intended only for NDIs, the corresponding web form should only be available to these user roles through the appropriate UI component for logged NDIs.

A MERIL Data Manager is able to create an RI entry with minimum information required since the MERIL Data Manager user can have at any time the needed information for the creation of a new RI entry.

Id: DI2	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that the MERIL Data Manager may not have an extended set of information about an RI, when he/she uses the RI web form, the creation of the entry can be done even without providing all otherwise compulsory fields.
2. Given the fact that the information stored may not be sufficient for publishing an entry, a new entry is flagged as draft on creation and the MERIL Data Manager should be able to flag an entry as draft.

A MERIL Data Manager can send an invitation to the designated –for a new RI- contact person (RI Coordinator) to connect to the back office in order to fill in the data of the new RI.

Id: DI3	Importance: High	Critical: Yes

Acceptance criteria:
1. The system should offer the appropriate notification management functionality.
2. Given the fact that this action is related to a contact person, the appropriate functionality should be available only if the RI record has contact person data. Otherwise the MERIL Data Manager should be informed accordingly.
3. Given the fact that this notification is related with a specific RI, it should contain clear identification information regarding the RI and/or a link to its MERIL view page.

4. Given the fact that this notification is related to a specific action, it should contain an adequate explanation regarding the purpose of the message.

An RI Coordinator can edit the RI record for which he has access rights and set it to 'finalized' when done.

Id: DI4	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this process should be done on the RI's form, when an RI Coordinator wants to edit an entry he/she should have access to the entry's web form.
2. Given the fact that this action is user role based, only users designated to edit RI entries will have access to the UI component that will allow this action.
3. Given the fact that an entry is not finalized until indicated otherwise, the entry is created in draft mode and is maintained as draft until indicated otherwise by the user.
4. Given the fact that data regarding an RI should be checked by the MERIL Office (MERIL Data Manager), whenever data are edited and new data are entered the MERIL Office should be notified accordingly.

Only the MERIL Data manager or system Administrator can set an RI record to "published" state if the information is correct and complete.

Id: DI5	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that this process should be done on the RI's form, when the MERIL Data manager wants to publish an entry he/she should have access to the entry's web form.
2. Given the fact that this action is user role based, only users designated to publish RI entries will have access to the UI component that will allow this action.

A MERIL Data manager should be able to delete an RI record because there is always the chance that a record is erroneous and/or outdated.

Id: DI6	Importance: Medium	Critical: No

Acceptance criteria:
3. Given the fact that this is a user role based action, only the MERIL Data Manager should have access to the UI components that allow such an action.
4. Given the fact that all data in MERIL are archived, when a user deletes an RI then the corresponding record is not deleted but flagged as "Archived".

All users can complete a self-assessment form and contact the MERIL Data Manager via e-mail with a request to include an RI on the MERIL portal

Id: DI7	Importance: Medium	Critical: No
Acceptance criteria: 1. The form will be provided as MS Word file and OpenOffice Writer file. 2. Given the fact that the user should be able to download the file and should be informed about the e-mail address for sending the form, the download link, e-mail address and guidelines for filling the form should be available in a separate web page. 3. Given the fact that the self-assessment form should be available to all users, the aforementioned page should be also available for all users.		

A MERIL Data Manager can notify a NDI and/or a MAC member that their input is needed concerning a set or an individual RI as part of the workflow for publishing an RI.		
Id: DI8	Importance: Medium	Critical: No
Acceptance criteria: 1. The system should offer the appropriate notification management functionality. 2. Given the fact that this notification is related with a specific RI, it should contain clear identification information regarding the RI and/or a link to its MERIL view page. 3. Given the fact that this notification is indented for NDIs and MAC Members, the MERIL Data Manager should have a list with all appropriate NDIs and MAC Members in order to choose to whom this notification is sent. 4. Given the fact that this notification is related to a specific action, it should contain an adequate explanation regarding the purpose of the message.		

NDIs and MAC Members can evaluate candidate RI entries that have submitted their application only via a self assessment form.		
Id: DI9	Importance: Medium	Critical: No
Acceptance criteria: 1. Given the fact that this functionality is related to the user role, it should be available only if the current user has the appropriate access rights. 2. Given the fact that this action can be performed while the user reviews the RI's data, the actual system functionality should be available in the RI's view page and in the RI's web form. 3. Given the fact that entries which are created by using the data in the self assessment form are distinct because of their corresponding status label (under evaluation), only these entries are going to be provided to the users.		

A MERIL Data Manager can notify an RI Coordinator regarding the publication state of his/her RI entry (accepted/rejected) in order to keep RI Coordinators up to date regarding the representation of his/her RI in MERIL.		
Id: DI10	Importance: High	Critical: Yes
Acceptance criteria:		

1. The system should offer the appropriate notification management functionality in the back-end.
2. Given the fact that this action is related to an RI Coordinator, the appropriate functionality should be available only if the RI record is related to an RI Coordinator. Otherwise the MERIL Data Manager should be informed accordingly.
3. Given the fact that this notification is related with a specific RI, it should contain clear identification information regarding the RI and/or a link to its MERIL view page.
4. Given the fact that this notification is related to a specific action, it should contain an adequate explanation regarding the purpose of the message.
5. Given the fact that an RI can be rejected, the notification should also contain an explanation regarding the reasons for the rejection.

A MERIL Data manager can review a draft/finalized RI entry and notify its RI Coordinator in order to complete or correct the available information.

Id: DI11	Importance: High	Critical: Yes

Acceptance criteria:
1. The system should offer the appropriate notification management functionality.
2. Given the fact that this action is related to an RI Coordinator, the appropriate functionality should be available only if the RI record is related to an RI Coordinator. Otherwise the MERIL Data Manager should be informed accordingly.
3. Given the fact that this notification is related with a specific RI, it should contain clear identification information regarding the RI and/or a link to its MERIL view page.
4. Given the fact that this notification is related to a specific action, it should contain an adequate explanation regarding the purpose of the message.
5. Given the fact that the RI Coordinator should be aware of what is needed to be done in order to complete the RI entry, when the MERIL Data Manager wants to send a notification of this type he/she should be able to indicate what data fields need to be completed or corrected.

A MERIL Data manager can send periodic requests by email to RI Coordinators for the update of their designated RI entries in order to keep MERIL's data up to date.

Id: DI12	Importance: High	Critical: Yes

Acceptance criteria:
1. The system should offer the appropriate notification management functionality.
2. Given the fact that this action is related to an RI Coordinator, the appropriate functionality should be available only if the RI record is related to an RI Coordinator. Otherwise the MERIL Data Manager should be informed accordingly.
3. Given the fact that this notification is related with a specific RI, it should contain clear identification information regarding the RI and/or a link to its MERIL view page.

4. Given the fact that this notification is related to a specific action, it should contain an adequate explanation regarding the purpose of the message.
5. Given the fact that the update of RI records is time related, the notification sent should contain the entry's date of last update.
6. The system back-end system should allow to select the mailing list of RI coordinators and include a "email all" function.

Registration of new users (Id: RNU)

Not logged in users can apply for registration through a web form in order to be granted authenticated access to the system.

Id: RNU1	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that the system should be able to identify the user, he/she will be asked to provide a set of basic information.
2. Given the fact that this form will be publicly available it should be protected by Denial of Service attacks.
3. Given the fact that the user's data will be checked first and then he/she will be provided with credentials, he/she will be informed via email for his/her registration and the login credentials.

Export data (Id: ED)

Logged in users can export the available to their user group lists of RIs to a spreadsheet file so as to obtain a file with information that they have choose and to be able to process data outside the system.

Id: ED1	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that a user should be able to export data from a list, all available lists should have an appropriate UI component that allows users to obtain the exported Excel file.
2. Given the fact that there are different lists available, each exported file should contain relevant information.
3. Given the fact that the MERIL Data Manager has access to lists providing data from all informational entities, he/she should be able to export these lists too.

All users can export the publicly available lists of RIs to a spreadsheet file so as to obtain a file with information that they have choose and to be able to process data outside the system.

Id: ED2	Importance: High	Critical: Yes

Acceptance criteria:
1. Given the fact that a user should be able to export data from a list, all available lists should have an appropriate UI component that allows users to obtain the exported Excel file.
2. Given the fact that there are different lists available, each exported file should contain relevant information.

Networking through social media (Id: NSM)

All users can be informed about MERIL activities through popular social media feeds.		
Id: NSM1	Importance: Medium	Critical: Yes
Acceptance criteria: 1. Given the fact that MERIL will have a presence in popular social media (e.g. Facebook, Twitter, etc), the MERIL portal should provide a feed with all latest posts from all its accounts. 2. Given the fact that this feed will contain mostly social media posts regarding news and updates, the feed should be sorted by date descending. 3. Given the fact that the social media feed will be available to all users, the UI components displaying this feed should be available in a page that is publicly available, e.g. the front page.		

4.4 User Map

The epics as described in the previous chapters do not imply a certain flow of information or a specific series of actions. One can loosely correlate the searching of RIs to the browsing and to the reviewing although depending on the user role one can skip the searching feature and use the provided lists to choose a specific RI. So, searching, browsing and reviewing are put in adjacent positions in the story map. The rest of the epics can be considered as independent so their position in the story map does not imply a correlation.

In total we have documented in the current deliverable 68 user stories. They are categorized based on the combination of their Importance factor and their Critical indicator. For the Importance factor we use a simple High/Medium scale and for the Critical indicator a Yes/No flag. This means that there are 4 different categories, the High/Yes (ranked first), the High/No (ranked second), the Medium/Yes (ranked third) and the Medium/No (ranked fourth). In the User Map the aforementioned categories are differentiated by using different colours (see table legend). A Minimum Viable Product is considered a system that fulfils the acceptance criteria of the High/Yes user stories, 48 in total.

Search RIs	Browse RIs	Review specific RI	Provide help	Produce visualizations /reports	Data Curation	Data Input	Registration of new users	Export data	System tools	Networking through social media
SR1	BRI1	RSRI1	PH2	PVR2	DC1	DI2	RNU1	ED1	ST1	NSM1
SR2	BRI2	RSRI3	PH3	PVR3	DC3	DI3		ED2	ST2	
SR3	BRI3	RSRI4	PH1	PVR4	DC4	DI4			ST3	
SR4	BRI4	RSRI6		PVR1	DC2	DI5			ST4	
SR5	BRI5	RSRI12				DI10			ST6	
SR6	BRI6	RSRI2				DI11			ST8	
	BRI7	RSRI13				DI12			ST9	
	BRI8	RSRI14				DI1			ST10	
	BRI9	RSRI5				DI6			ST11	
	BRI10	RSRI7				DI7			ST5	
		RSRI8				DI8			ST7	
		RSRI9				DI9				
		RSRI10								
		RSRI11								

High/Yes

High/No

Medium/Yes

Medium/No

Table 1. The User Map

4.5 Use Case Diagrams

From the provided list of user stories one can derive a set of user cases. For this deliverable the term use case describes a simple label that corresponds to a specific user action, to an interaction between the system and the user. These labels are used in a UML Use Case Diagram in order to depict the various features offered by the system to the different user groups. These diagrams are presented per user type. Each user story is represented by a small description and all user stories are organized under epics.
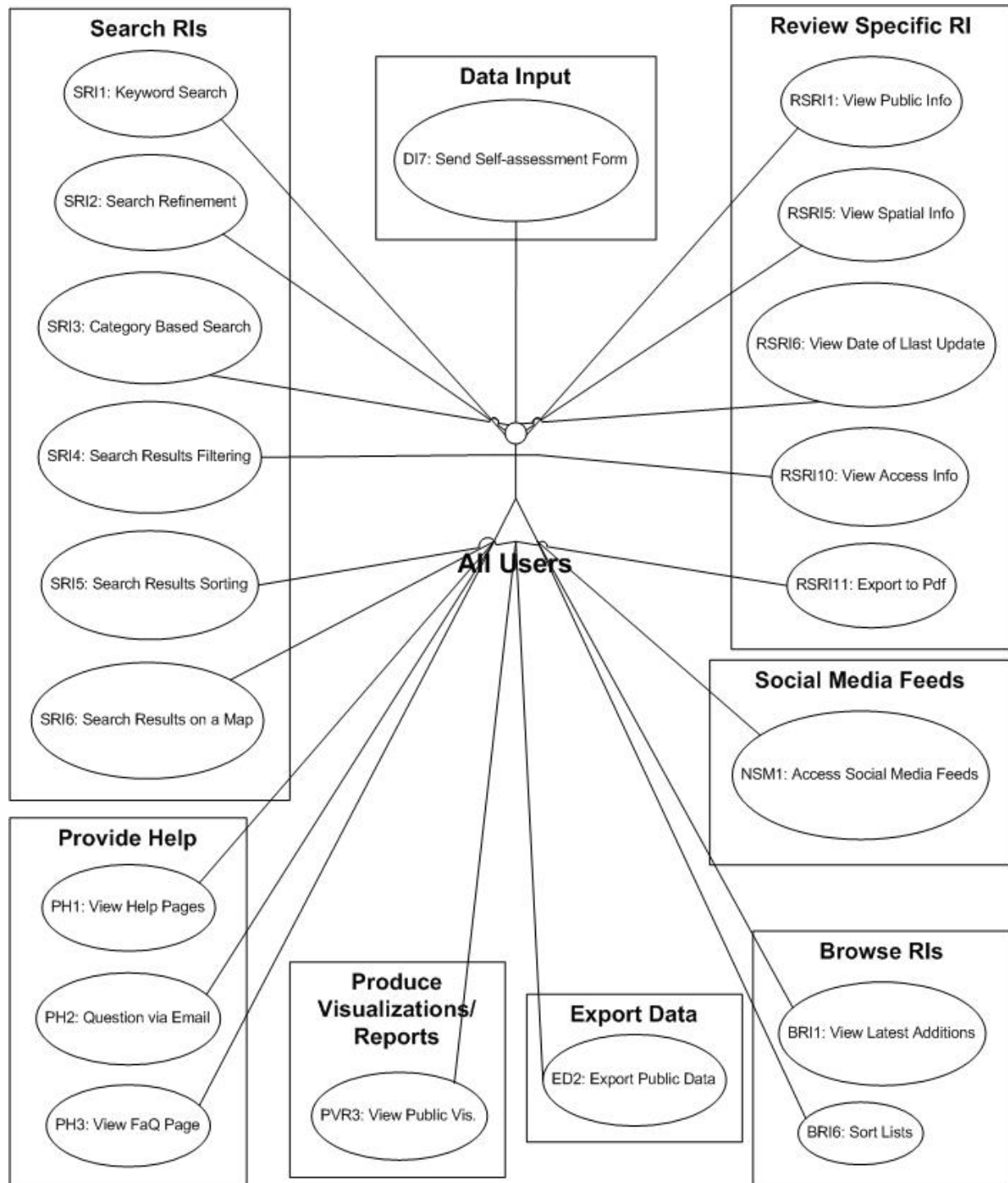
Image 1. Use case diagram for All Users type in the MERIL platform.

The diagram depicted in Image 1 is composed by those user stories that apply to all users, logged in or otherwise.
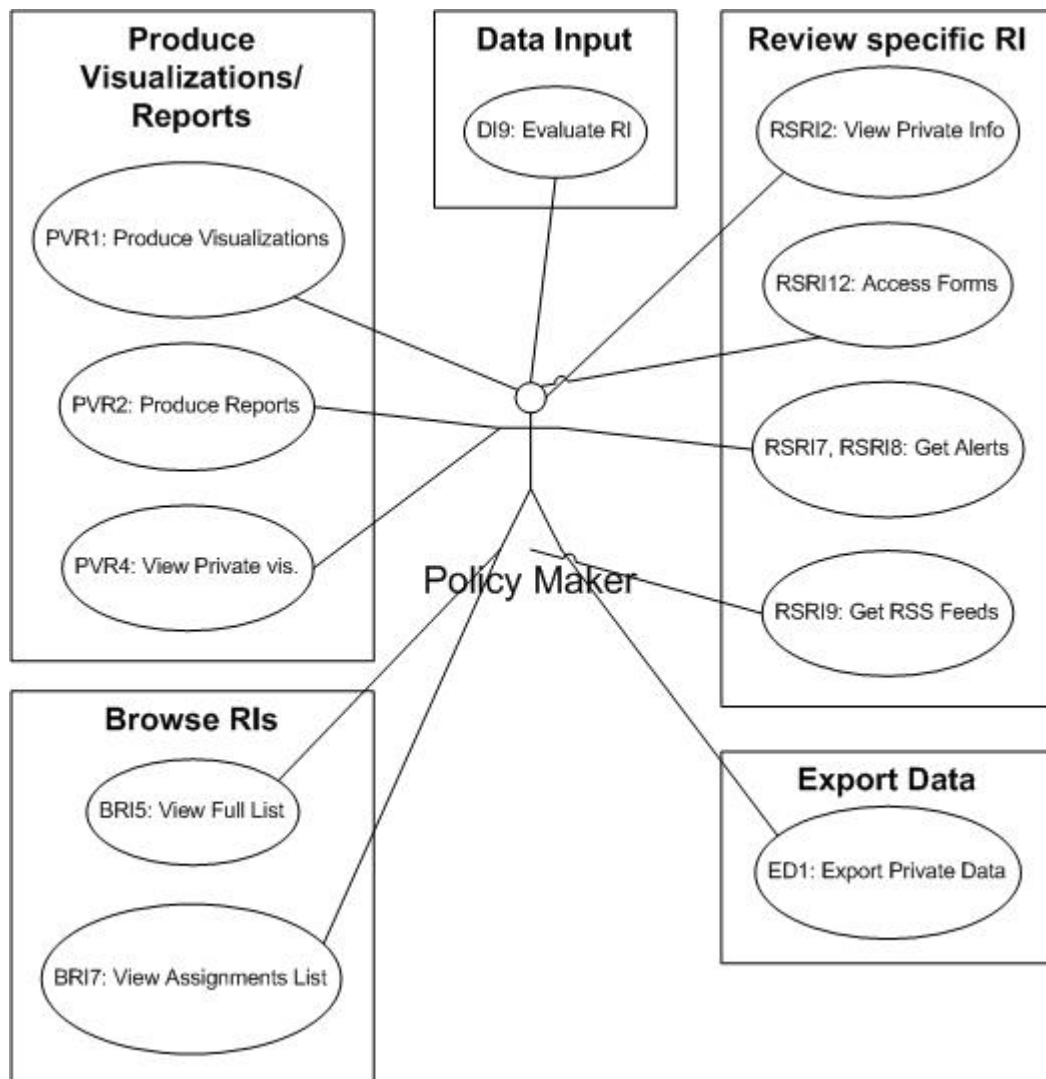
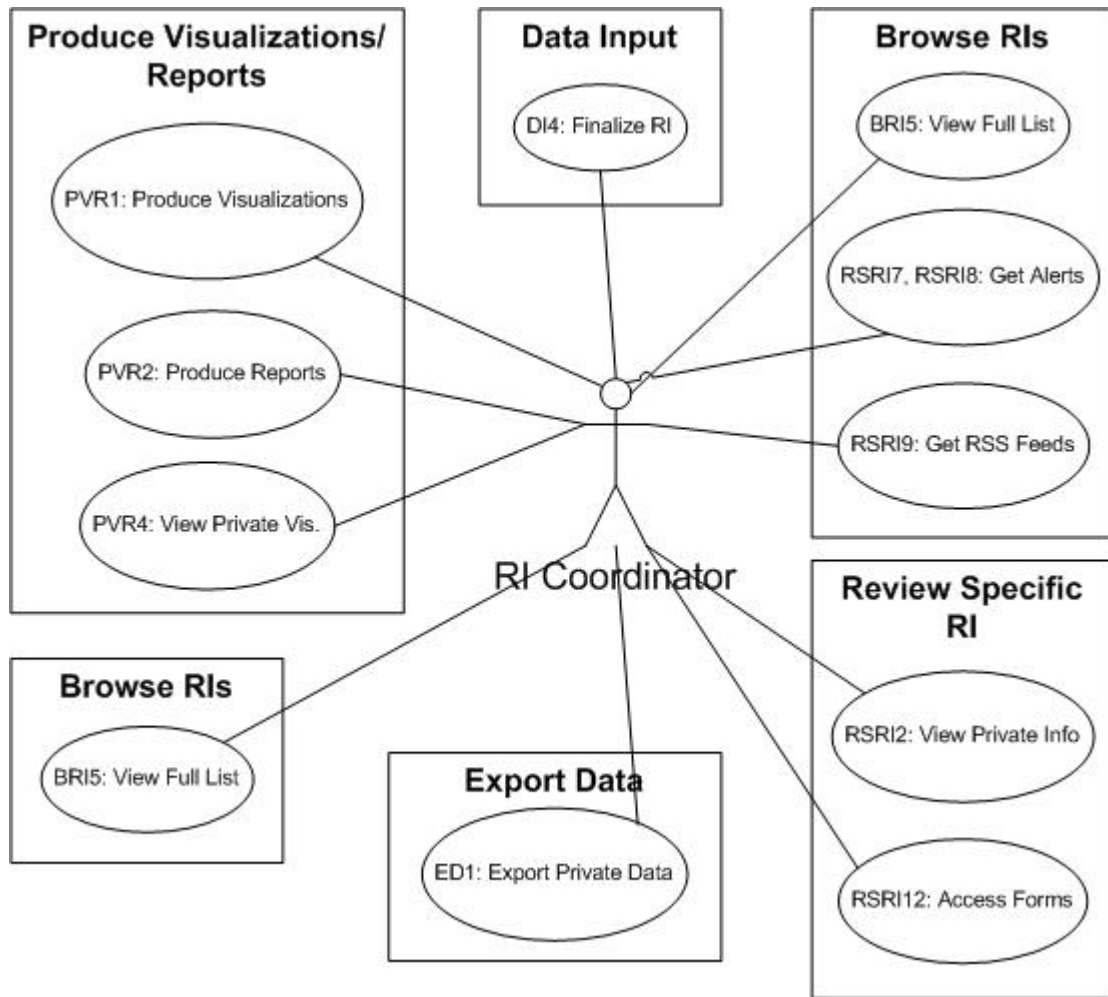**Image 2.** Use case diagram for Policy Maker type in the MERIL platform.

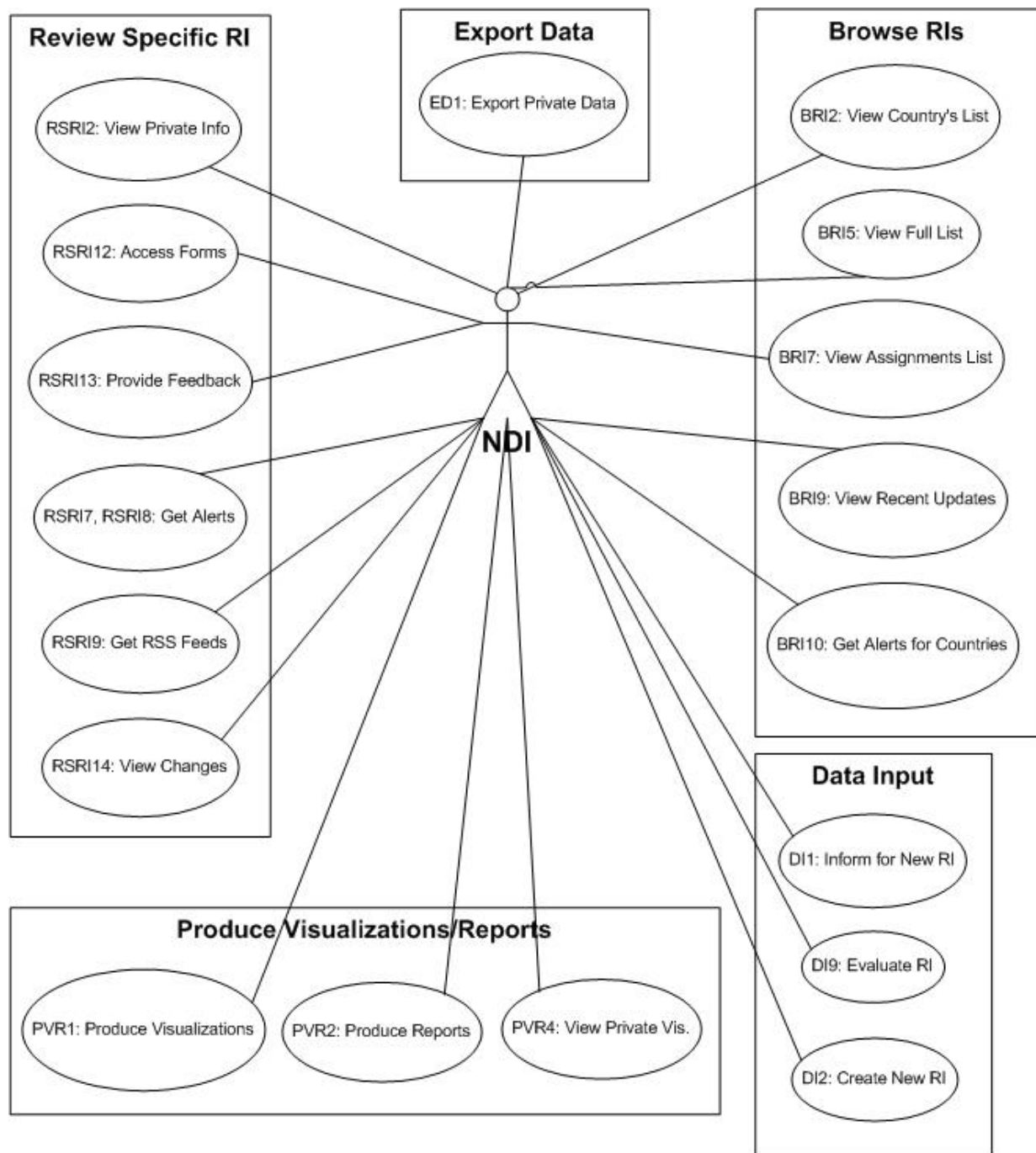**Image 3.** Use case diagram for RI Coordinator type in the MERIL platform.

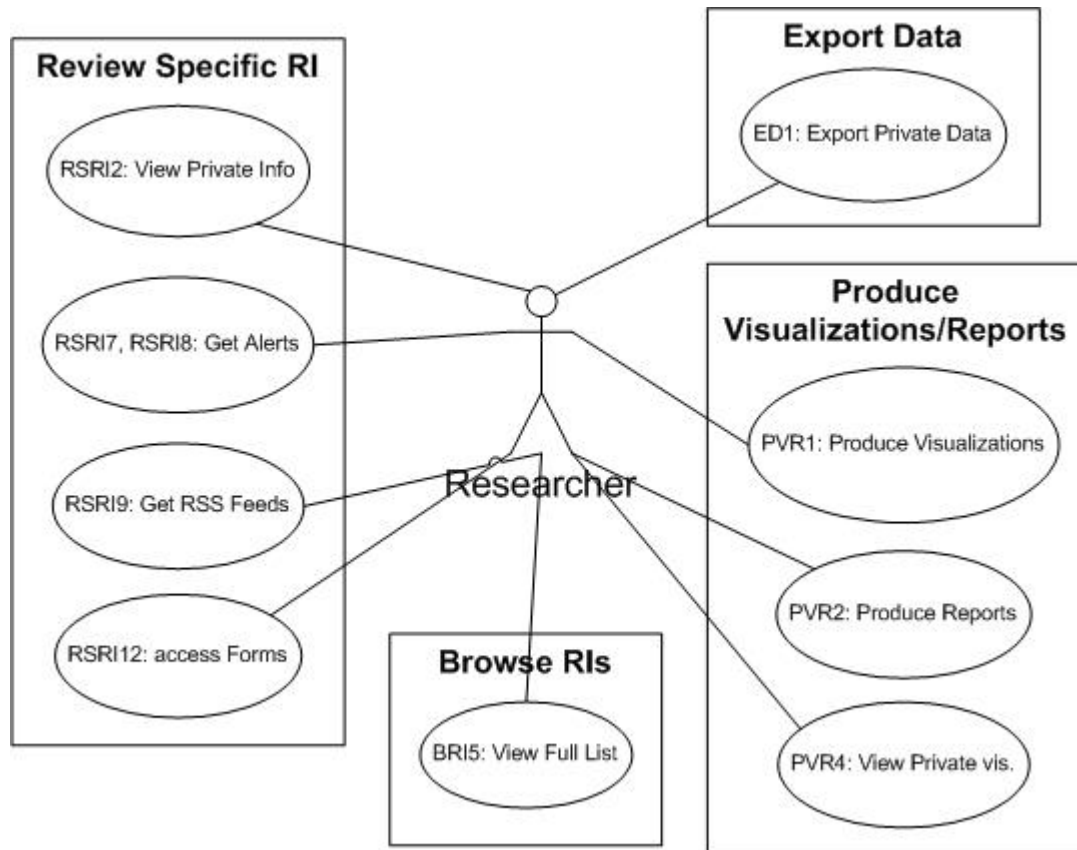**Image 4.** Use case diagram for NDI type in the MERIL platform.

Image 5. Use case diagram for Researcher type in the MERIL platform.
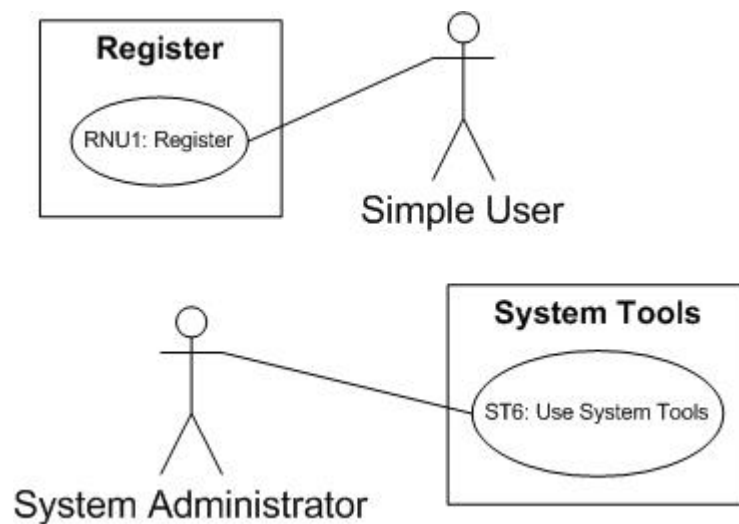

Image 6. Use case diagram for Simple User and System Administrator types in the MERIL platform.

The diagram depicted in Image 8 does not imply that these users can only have access to these functionalities but rather it describes two exceptions. A Simple User (who also belongs to the user type All Users) can access the registration form whereas logged in users cannot (they also belong to the user type All Users). A System administrator has access to all system functionalities that other users have. Access to system tools is only granted to System Administrators.
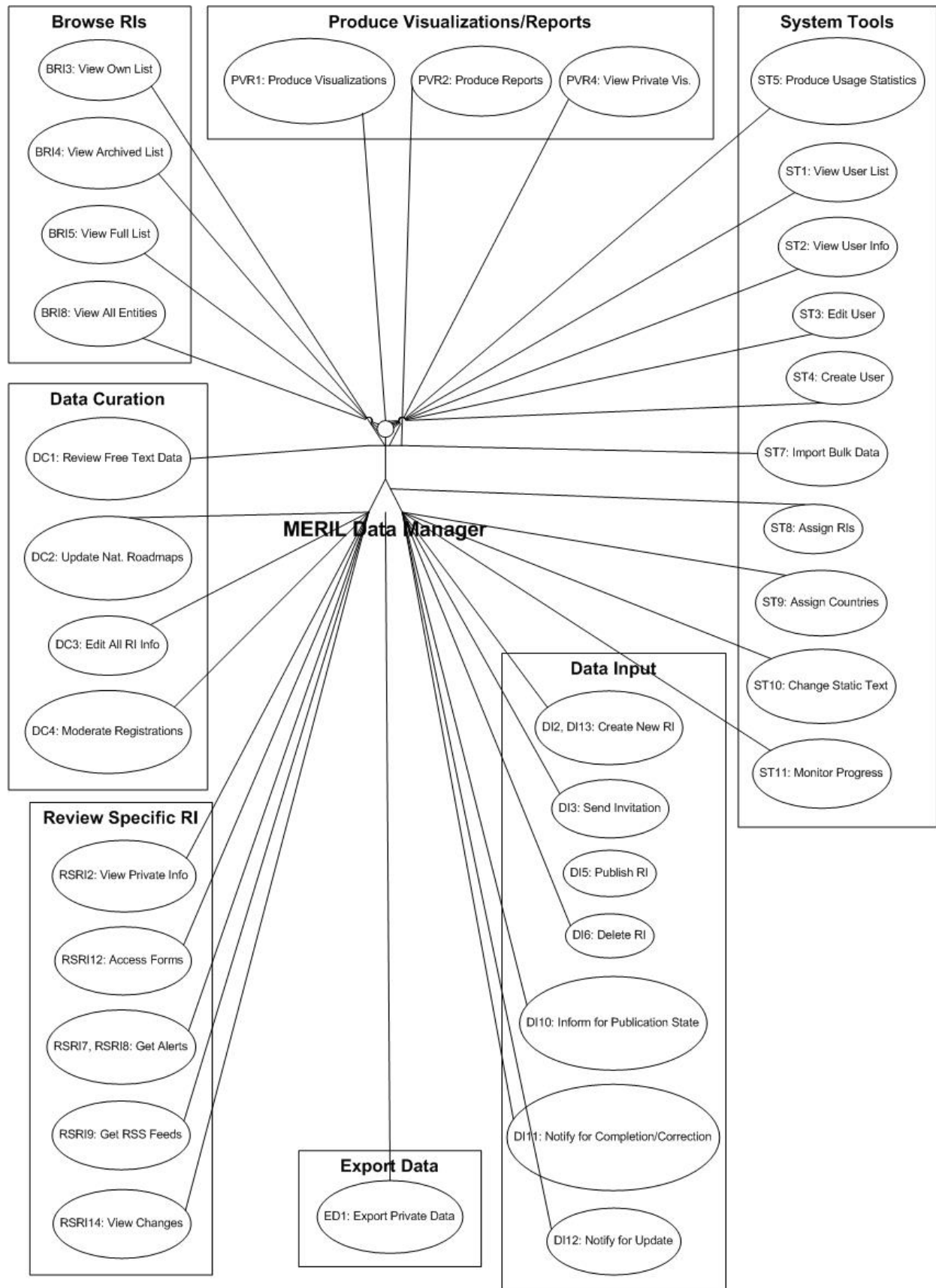
Image 7. Use case diagram for MERIL Data Manager type in the MERIL platform.

5. Conclusions

The implementation of the MERIL web platform constitutes a very important milestone for the completion of the project. As a first step towards that goal the current deliverable catalogues the needed functionality through the listing of user stories. The identification of the presented user stories was done through a business level description of the web platform and by taking into consideration the project's business needs. Thus, the current document provides a high level of abstraction specifications that can be and will be used for a first iteration of the implementation process. These user stories and the early versions of the system will also provide the needed information for the completion of the D3.2 deliverable (Book of Specification for MERIL 2). By comparing the business description of the platform in the current document and the functionalities of the previous MERIL portal one can conclude that the scope of the new MERIL project is not only wider but it also includes a diverse set of distinct features.

From a total of 68 user stories, a 70% are considered of high importance and critical for the system. These user stories describe the functionality of the project's minimum viable product. This means that the current description will lead to a number of heavily front-loaded implementation iterations.

Appendix A. Questionnaire

The following questions have been used for the on line survey created for collecting feedback from the NDIs. Contact information questions (1 and 2) are not included.

3. Have you used the MERIL portal in the past?

4. What do you see as the main drawbacks of the current MERIL portal and data structure? Is the information such as presented at http://portal.meril.eu/ clearly structured and useful to your purposes?

5. What improvements could be made in terms of the data collected and functionalities available on the MERIL portal http://portal.meril.eu/ ?

6. What critical (essential) features and new functionalities should be included in the next upgrade of the MERIL-2 portal?

7. What optional features would you like to have in the next version of the MERIL portal and why?

8. What do you perceive as main challenges for MERIL? Please comment on any aspects that may be related to the specific RI context in your country, data availability, data collection, data usage or any other issue.

9. From your perspective, what is the main added value of MERIL?

10. Do you have any further comments or suggestions?