OpenRiskNet

RISK ASSESSMENT E-INFRASTRUCTURE

Deliverable Report D5.1

First report on the management process

This project is funded by
the European Union

OpenRiskNet: Open e-Infrastructure to Support Data Sharing, Knowledge Integration and *in silico* Analysis and Modelling in Risk Assessment

Project Number 731075

www.openrisknet.org

Project identification

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Project Partners	P1 Douglas Connect GmbH Switzerland (DC) P2 Johannes Gutenberg-Universitat Mainz, Germany (JGU) P3 Fundacio Centre De Regulacio Genomica, Spain (CRG) P4 Universiteit Maastricht, Netherlands (UM) P5 The University Of Birmingham, United Kingdom (UoB) P6 National Technical University Of Athens, Greece (NTUA) P7 Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V., Germany (Fraunhofer) P8 Uppsala Universitet, Sweden (UU) P10 Informatics Matters Limited, United Kingdom (IM) P11 Institut National De L'environnement Et Des Risques, France (INERIS) P12 Vrije Universiteit Amsterdam, Netherlands (VU)

Deliverable Report identification

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SUMMARY

This report summarises the management process adopted within the OpenRiskNet project. This process envisaged the implementation of best project management practices to ensure the effective execution of the work plan, tracking and documentation of task progress, an effective communication between partners on technical and administrative matters, as well as the communication with the EC office and external stakeholders (e.g. associated partners, scientific advisory board, collaborators from other projects and initiatives, data protection officer, etc.). A set of tools (e.g. Google Drive, Google mailing list, Google Calendar, Slack, GoToMeeting, Freedcamp, GitHub, etc.) and also templates for reports, meetings agendas, presentations, were implemented in order to facilitate the work of technical Work Packages (WPs) and ensure an effective information and knowledge exchange. These were also facilitated by several meetings (virtual or face-to-face), that were organised or facilitated by the management team, e.g. kick off-meeting, annual general assembly meeting, and management meetings involving WP leaders and the executive board. Furthermore, several other internal or external meetings were coordinated or organised in collaboration with the other WPs. The reporting process was supported by setting-up the report templates and the review and the submission of the deliverable reports or milestones.

Finally, an internal Project Handbook was prepared and updated periodically, in which the project management was described in detail. This ensured an effective communication of the process to all project members, as well as an efficient transfer of the information to new project members.

The activities included also gathering the information for and coordination of the public website development (in close collaboration with the other WPs that provided the content for different sections of the website) and creation of a visual identity for OpenRiskNet adopted in all internal and external materials produced by the project members. In support to the dissemination activities, an approval process for dissemination materials was implemented.

The management team coordinated two amendments, of the grant agreement and the consortium agreement, respectively, due to the change of project partners, and facilitated the financial and technical reporting.

INTRODUCTION

OpenRiskNet is a 3 year project funded under the Horizon 2020 EINFRA-22-2016 Programme. The main objective is to develop an open e-Infrastructure providing resources and services to a variety of communities requiring risk assessment, including chemicals, cosmetic ingredients, therapeutic agents and nanomaterials. The OpenRiskNet consortium is formed by 11 Organisations from 8 countries (**Figure 1**), and also works with a network of partners, organised within an Associated Partners Programme.

Table 1. Organisation partners in the OpenRiskNet consortium

Organisation	Country	Acronym	Website
Douglas Connect GmbH	Switzerland	DC	http://douglasconnect.com/
Johannes Gutenberg-Universitat Mainz	Germany	JGU	https://www.uni-mainz.de/
Fundacio Centre De Regulacio Genomica	Spain	CRG	http://www.crg.eu/
Universiteit Maastricht	Netherlands	UM	https://www.maastrichtuniversity.nl/
The University Of Birmingham	United Kingdom	UoB	http://www.birmingham.ac.uk/
National Technical University Of Athens	Greece	NTUA	https://www.ntua.gr/
Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.	Germany	Fraunhofer	https://www.fraunhofer.de/
Uppsala Universitet	Sweden	UU	https://www.uu.se/
Informatics Matters Limited	United Kingdom	IM	http://www.informaticsmatters.com/
Institut National De L'environnement Et Des Risques	France	INERIS	http://www.ineris.fr/
Vrije Universiteit Amsterdam	Netherlands	VU	https://www.vu.nl/

Toxicology and risk assessment are undergoing a paradigm shift, from a phenomenological to a mechanistic discipline based on *in vitro* and *in silico* approaches that represent an important alternative to classical animal testing applied to the evaluation of chronic and systemic toxicity risks. Large databases and highly sophisticated methods, algorithms and tools are available for different tasks such as hazard prediction, toxicokinetics, and *in vitro – in vivo* extrapolations to support this transition. However, since these services are developed independently and provided by different groups world-wide, there is no standardised way to access the data or run modelling workflows. To overcome the fragmentation of data and tools, OpenRiskNet will provide open e-Infrastructure resources and services supporting different scientific communities. The activities of the project are organised in 6 work packages (WPs):

- WP1 - Requirement Analysis, Outreach and Case Studies
- WP2 - Interoperability, Deployment and Security
- WP3 - Training, Support, Dissemination
- WP4 - Service Integration
- WP5 - Coordination and Management
- WP6 - Ethics requirements

WP1 performs the requirements analysis and will test the functionality on specific case studies. WP1 coordinates also the interactions with the Associated Partners. WP2 and WP3 include all technical and scientific developments and user support, while WP4 is responsible for implementing the various services into the infrastructure. WP5 deals with the project management and coordination and WP6 gathers all requirements related to ethics. Each of the WPs is coordinated by a leader and deputy leader.

Further, the management team coordinates and facilitates the process in fulfilling the formal requirements of the project, in terms of tracking of tasks, meeting organisation, internal and external communication, amendments, preparation of reports, etc.

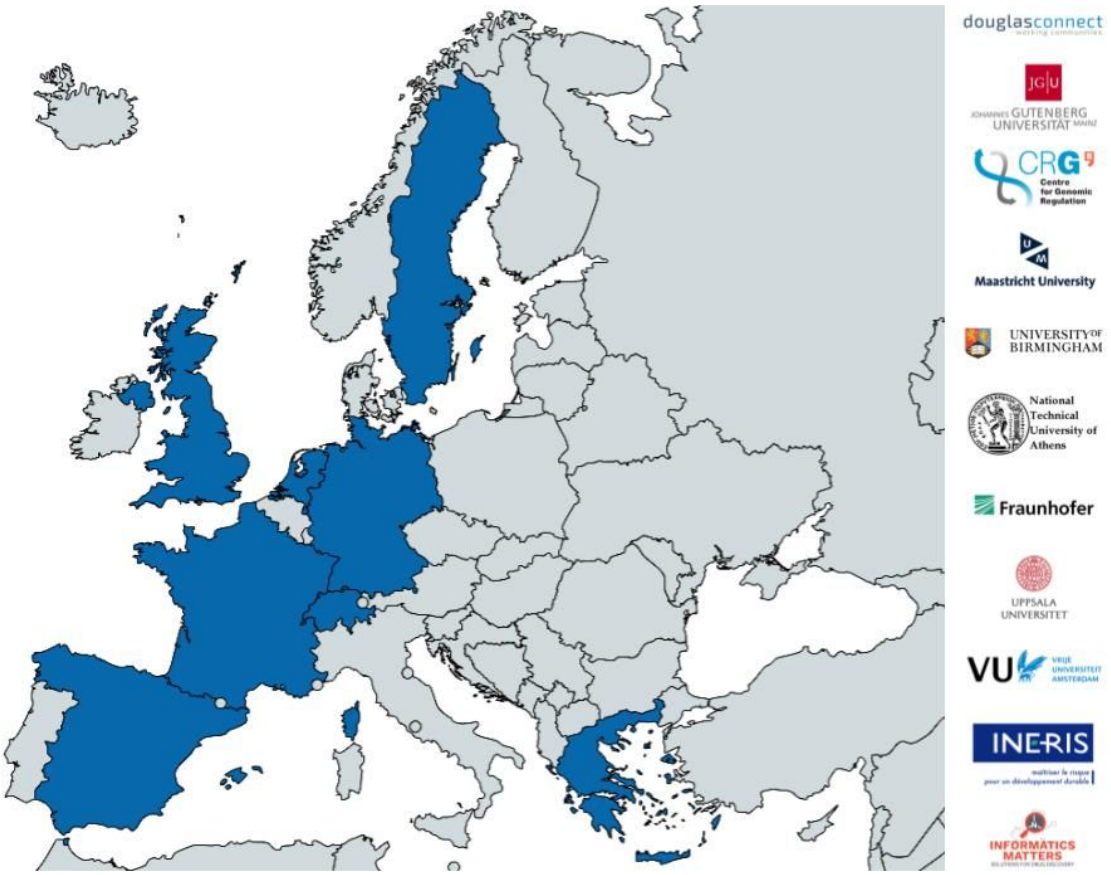


Figure 1. Countries and organisations represented within the OpenRiskNet consortium[1]

[1] Map created with mapchart.net

MANAGEMENT PROCESS

Coordination and tracking

An effective project management process and tracking of all project activities, tasks and deliverables was implemented (**Figure 1**). This includes facilitating of information exchange, documentation, as well as communication on the project progress within the consortium, with the EC and with other stakeholders. Thus, a set of tools for communication, task tracking and documentation were proposed, agreed and implemented.

The use of the tools and the overall process is described in the OpenRiskNet **project management handbook**, ensuring an effective information transfer between all project members. Additionally, several other summary documents or spreadsheets were implemented, e.g.:

- OpenRiskNet Structure: Summary of WPs, Tasks, Deliverables, Milestones, project member contacts, etc.
- OpenRiskNet Performance Metrics: tracking of performance metrics for all WPs
- OpenRiskNet Budget: tracking of costs summary per partner and WP

The **Executive Board** of the project was established following internal discussions and by vote by each partner. The board has 7 members, including the project coordinator and representatives of each WP.

Similarly, the **Scientific Advisory Board**, was established and includes 4 external scientists, covering the areas of computational modelling, adverse outcome pathways, data management and bioinformatics.

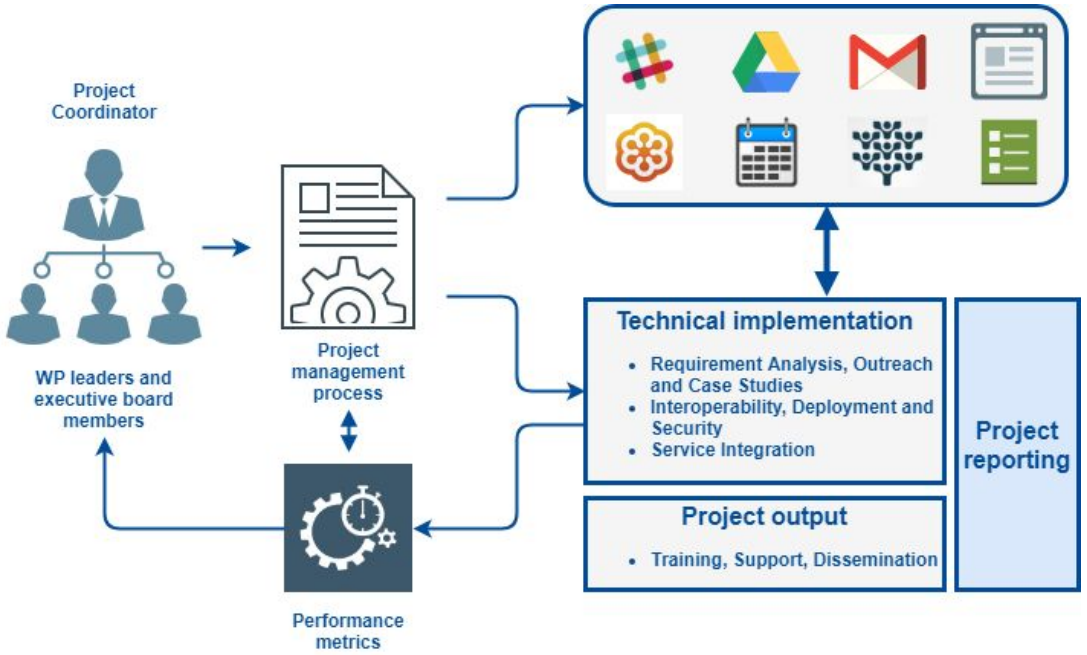


Figure 2. The coordination and tracking approach in OpenRiskNet

Documentation and management tools

Different tools are used for internal communication and project task and deliverable tracking, including services for storage of internal documents and communication.

Google Drive[2]

This service is used for storage of all working and final versions of the project files (e.g. documents, spreadsheets, slides, text files, etc.). All project members have full editing access to all folders and files.

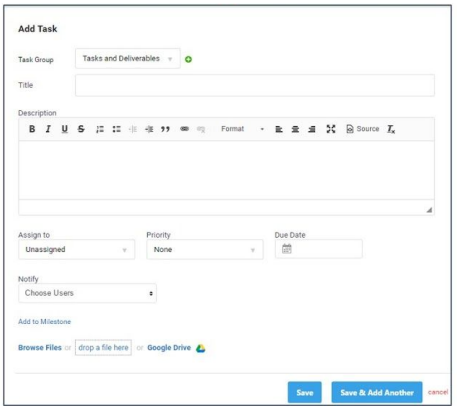
The structure includes subfolders for each WP, in which the WP leaders and members are organising the structure based on their specific activities.

Google Calendar[3]

A Shared Calendar was set-up, visible to all project members and used for scheduling all meetings and listing of deadlines concerning the whole consortium or specific tasks in the project.

Freedcamp[4]

This tool aims to support the project managers, work-package leaders and project members to follow the project progress. The tool facilitates the task tracking and the reporting by its various functionalities for Tasks, Deliverables and Milestones tracking, Calendar, Google Drive integration, etc. Also it is used for tracking different management issues, reviewing of dissemination materials and following various other activities. The tool allows to create Tasks, initiate discussions, add milestones, track time, add files and create events.



Communication tools

A **mailing list** was created for all project members and it is used for general communication related to the project, meeting announcements, deadline reminders, etc.

The **slack** application is used for daily communication in the project, on specific technical and/or administrative details. Different channels were implemented (for WPs or task discussions, or for notifications on the github commitments or calendar events).

The **GoToMeeting** application is used for internal and external virtual meetings but also to

[2] https://www.google.com/drive/

[3] https://www.google.com/calendar

[4] https://freedcamp.com/

broadcast and record the training sessions organised by the project.

Templates

Various templates are available for project reports, milestones, meeting agendas and presentations. Generally, these templates are set-up to be used online (e.g. as Google docs or slides) but they can also be formatted for offline use (e.g. for Conferences).

Dissemination activities

The dissemination activities are coordinated by WP3. However, a close interaction with the project management team is needed in order to coordinate and synchronize the dissemination activities with the other meetings, events, external communication, as well as reporting.

A dissemination activity tracker for project internal use was implemented in the form of a shared spreadsheet, where all Events, Communication activities, Publications and Tutorials are summarised. On the other hand, the main dissemination activities are listed on the public website, together with the reference links. The project partners are encouraged to publish under open access license any outcome of the project, using available tools like **Zenodo**[5], **Slideshare**[6], etc. Zenodo for example, helps researchers to receive credit by making the research results citable and through **OpenAIRE**[7] integrates them into existing reporting lines to funding agencies like the European Commission. Citation information is also passed to DataCite and onto the scholarly aggregators.

Further, the preparation of the **Plan for the Exploitation and Dissemination of Results (PEDR)** was supported. The PEDR includes details on the most significant activities planned to be carried out by the project members in order to communicate the achievements of the project to the scientific community or any other stakeholders.

Detailed information on the Dissemination and training activities are also provided in **Deliverable 3.4**, a publicly available report.

Project website

In order to support the dissemination of OpenRiskNet activities to the scientific community but also to the general public, a project website was created[8]. It contains general information on the project objectives, organisation partners as well as detailed information on how other organisations can become associated partners of OpenRiskNet.

On the technical development side, the website gatherers information on the Case Studies and their associated use cases, the description of the stepwise API Design Concept adopted, the semantic annotation concept for data and software tools, and links to the github repositories and the service discovery.

[5] https://zenodo.org/
[6] https://www.slideshare.net/
[7] https://www.openaire.eu/
[8] www.openrisknet.org

Review and approval process of dissemination materials

According to the OpenRiskNet Consortium Agreement (*Article 8.4*): "*Prior notice of any planned publication shall be given to the other Parties at least 30 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 15 calendar days after receipt of the notice. As soon as all parties have approved the publication or if no objection is made within the time limit stated above, the publication is permitted.*"

To fulfill these requirements, the management team has proposed and implemented an approval process for the external dissemination activities (i.e. publications like peer-review articles, presentations, posters, etc.):

Step 1.	Identify the event/journal where the member of OpenRiskNet wants to participate/publish and enter all the details in the shared Dissemination Activity spreadsheet.
Step 2.	Prepare the dissemination materials (e.g. the abstract, or the draft publication, draft presentation, etc.).
Step 3.	Add a new 'Issue' into OpenRiskNet Freedcamp under the section "Review of external dissemination activities". Add details like document type, event title, date, location and notify the project members (at least the project coordinator and the principal investigators (PIs) from each Organisation) directly from Freedcamp.
Step 4.	Once the deadline of the approval process passes, the project member can proceed with the dissemination. If the notification cannot be done at least 30 days before the submission, the issue will fall under 'fast track' approval process, meaning that the PIs of each Organisation will be requested to give feedback (e.g. approve, disapprove) by a deadline specified by the submitter.
Step 5.	Once the process is finalised, i.e. the 15 days notification period is passed and/or all PIs have approved the material, the issue will be marked as completed and it can be disseminated.

Project performance metrics

Each of the WPs has a set of performance metrics (**Table 2**) that are assessed and updated every 6 months. The achievements at M18 are shown in Figures and Tables below. The metrics are quantitative or qualitative, depending on the specific activity developed by the respective WP.

Table 2. Performance metrics for all WPs

WP	Title
WP1	Feedback for all communities to survey
	Number of interviews (>= 10)
	Number of associated partners (>=10)
	Integration of external tools as result of the Implementation Challenge (>= 5)
	Completed case studies (>= 5)
WP2	Existence of reference virtual instances of the e-infrastructure
	Status report from regularly executed automatic testing procedures of core and services

	Generation of list of all available services using the discovery service with all relevant information
WP3	Number of workshops and hackathons (Successful delivery >= 2 (until M18) and >= 5 (until M36) training workshops or hackathons)
	Acceptance of support facilities
	Positive feedback from external participants at the workshops and hackathons
	Active participation to conferences and meetings (Successful delivery >= 5 (until M18) and >= 10 (until M36) participation in conferences)
WP4	T4.1: Successful integration of >= 6 (until M18) and >= 10 (until M36) services
	T4.2: Successful integration of >= 2 (until M18) and >= 4 (until M36) services
	T4.3: Successful integration of >= 4 (until M18) and >= 10 (until M36) services
	T4.4: Successful integration of >= 1 (until M18) and >= 2 (until M36) services
	T4.5: Successful integration of >= 4 (until M18) and >= 6 (until M36) services
	T4.6: Successful integration of >= 6 (until M18) and >= 10 (until M36) services
	T4.7: Successful integration of >= 2 (until M18) and >= 3 (until M36) services
WP5	Public webpage created (by M3)
	Tracking and documentation systems implemented (by M3)
	Number of face-to-face consortium meetings (>=4)
	Number of management meetings (virtual or f2f) (>=2/year)
	Number of virtual project meetings (>=4/year)
	Number of virtual technical meetings (>=12/year)

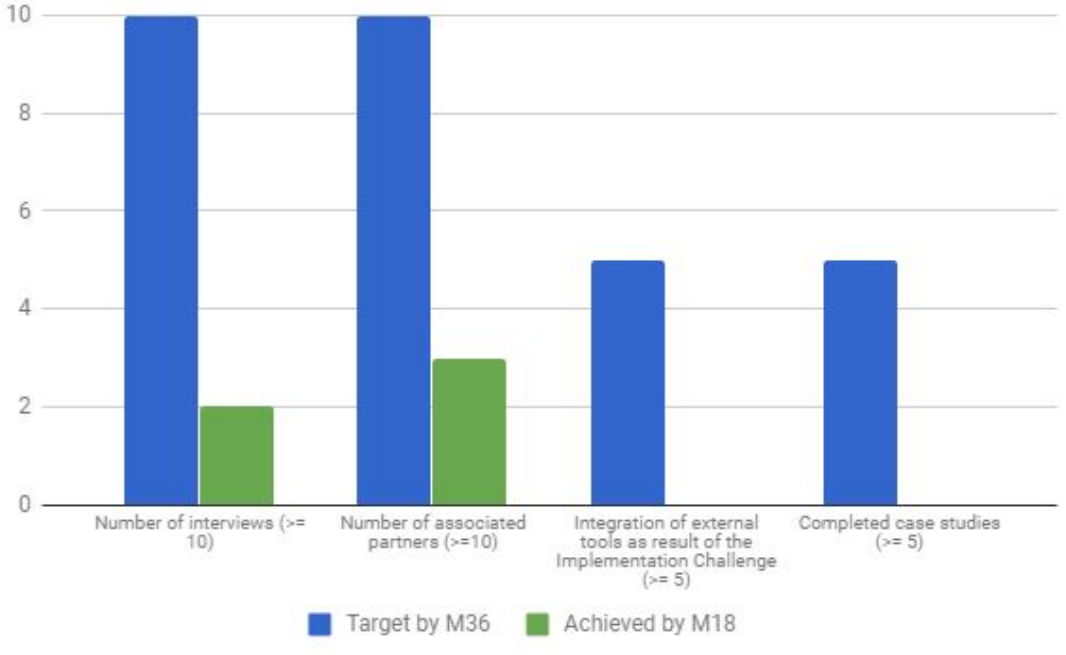


Figure 3. Status at M18 of the performance metrics in **WP1** (Requirement Analysis, Outreach and Case Studies)[9]

[9] Seven Case Studies were already defined by M12 (see Deliverable 3.1) and are under development

The targeted communities by the OpenRiskNet refer to the research communities involved in safety assessment including toxicology and predictive toxicology, systems and structural biology, bioinformatics and its subtopics toxicogenomics, cheminformatics, biophysics and computer science, as well as of the chemical manufacturing industries, e.g. pharmaceutical companies, chemical and agrochemical industries and cosmetic industries, and the corresponding regulatory agencies. Moreover, the stakeholders of OpenRiskNet include the end users (e.g. members of academia, industry, risk assessors, regulators) and developers (e.g. tool developers, data managers, infrastructure providers). As described in Deliverable 1.1, the survey was filled by 28 participants from 3 continents (Europe, America and Asia; 61% end users and 39% developers), representing different sectors like academia (majority), chemical industry, SMEs/research organisations (developers, risk and safety assessors, machine learning and data scientists, nanomaterials research), regulatory/ governmental/agencies and consultants in toxicology.

Table 3. Status at M18 of the performance metrics in **WP2** (Interoperability, Deployment and Security)

Metric	Status
Existence of reference virtual instances of the e-infrastructure	The core components of a VRE have been defined and a set have been created, in a production website accessible by end users at: https://home.prod.openrisknet.org/ This production site is described in detail in the Deliverable 2.3 report, which also describes the deployment of a number of partner applications, as well as a solution for service discovery.
Status report from regularly executed automatic testing procedures of core and services	Relevant for RP2
Generation of list of all available services using the discovery service with all relevant information	This functionality is operational. A first iteration of the OpenRiskNet Service Registry was created and deployed into the reference environment (http://orn-registry-openrisknet-registry.prod.openrisknet.org/). As of May 2018, the lazar modelling service (JGU) and the chemidconvert service (DC) have been adapted to serve a OpenRiskNet registry service compliant openapi definition. The other services are currently being modified to be findable via the Service Registry.

Table 4. Status at M18 of qualitative performance metrics in **WP3** (Training, Support, Dissemination)

Metric	Status
Acceptance of support facilities	The support functions for OpenRiskNet are functional and available, consisting of a helpdesk, a wiki, and an issue tracker (see Deliverable 3.3).
Positive feedback from external participants at the workshops and hackathons	The participants at the hackathons and workshop (e.g. within OpenTox Conference 2017, Nextflow workshop) had the opportunity to

	learn, test and directly interact with the developers of different ontology and modelling applications or services (e.g. Jaqpot, Jenkins, Squonk, CPSign, Nextflow, MDStudio).

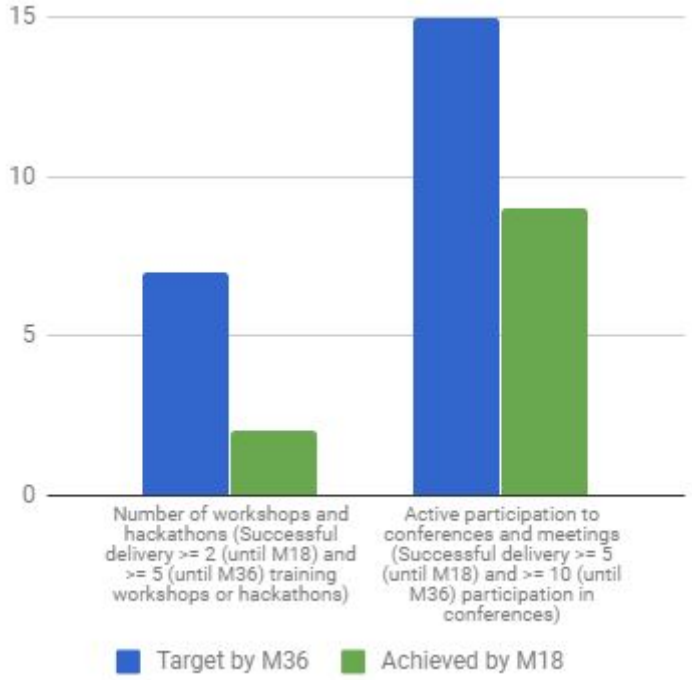


Figure 4. Status at M18 of quantitative performance metrics in **WP3** (Training, Support, Dissemination). Additionally, two internal workshop/hackathon sessions were organised, not shown in the chart.

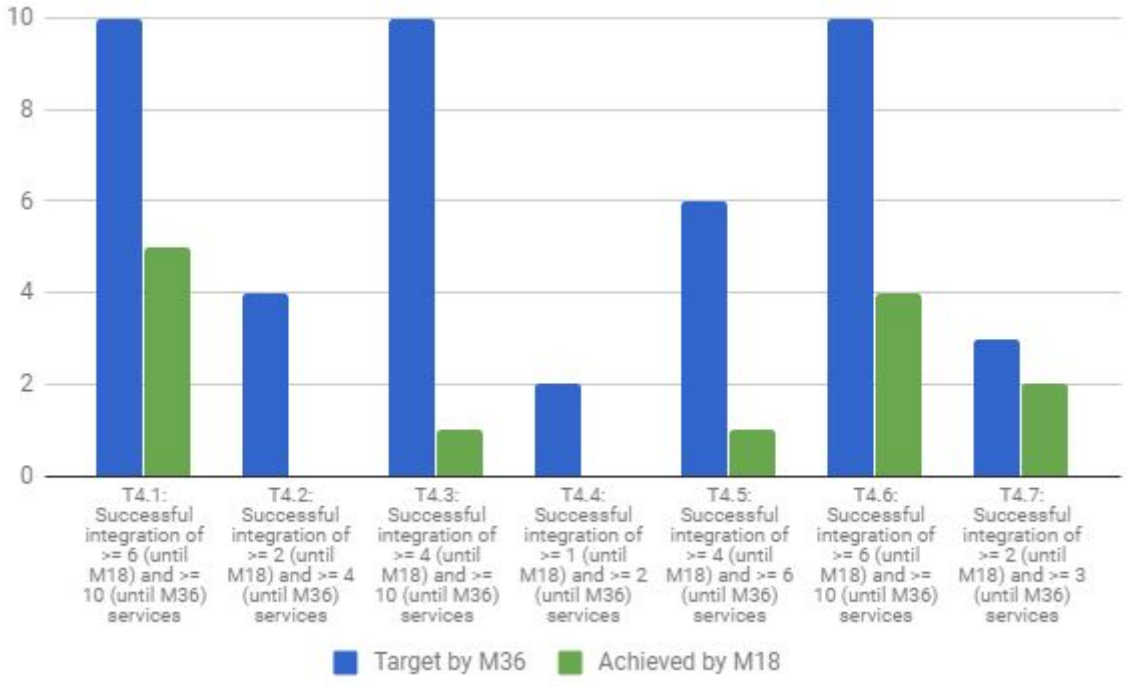


Figure 5. Status at M18 of quantitative performance metrics in **WP4** (Service Integration)

Table 5. Status at M18 of qualitative performance metrics in **WP5** (Coordination and Management)

Metric	Status
Public webpage created (by M3)	The website https://openrisknet.org/ was released on 23 June 2017. The delay did not cause issues to the partners or to the project implementation, instead at the time of webpage release, sufficient materials were available from the technical WPs as well as on dissemination in order to populate the website with useful information.
Tracking and documentation systems implemented (by M3)	In the management process, a few systems were implemented by M3: a set of Google spreadsheets and documents, as well as a Freedcamp account for tracking of task, deliverables and other activities status. For technical documentation a GitHub account was set-up (including a Wiki section), as well as other services described in the Deliverables of WP1, 2, 3 and 4.
Number of virtual technical meetings (>=12/year)	Recurrent meetings were organised (e.g. every second week by WP2) focused on technical aspects of the project implementation and infrastructure development, but also on the interactions with the other activities with WP1, 3 and 4 (ontology, case studies, services, etc.).

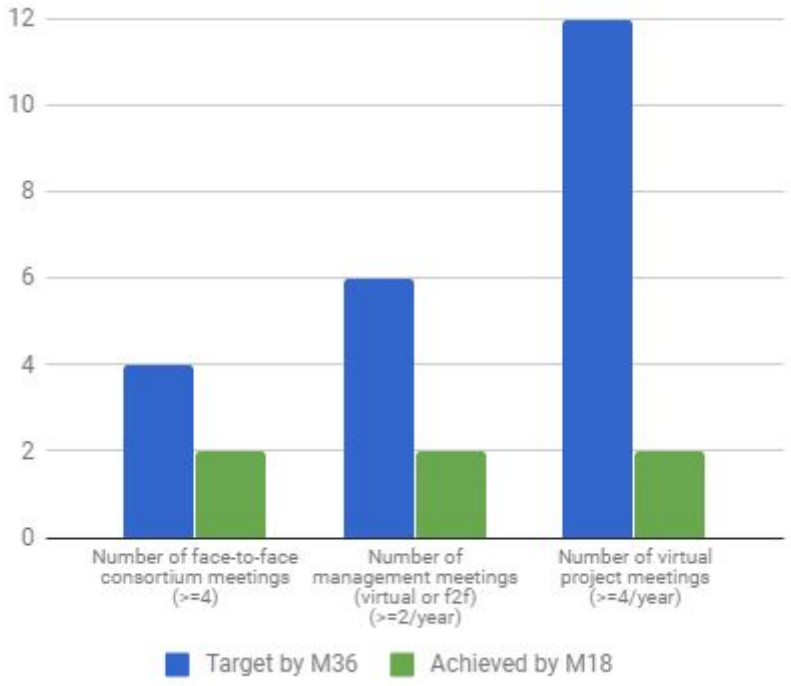


Figure 6. Status at M18 of quantitative performance metrics in WP5 (Coordination and Management)

Budget and costs tracking

The OpenRiskNet project is 100% funded by the EU contribution with a contribution of about 2.9 mil EUR[10]. The distribution per partner is shown in **Figure 7**.

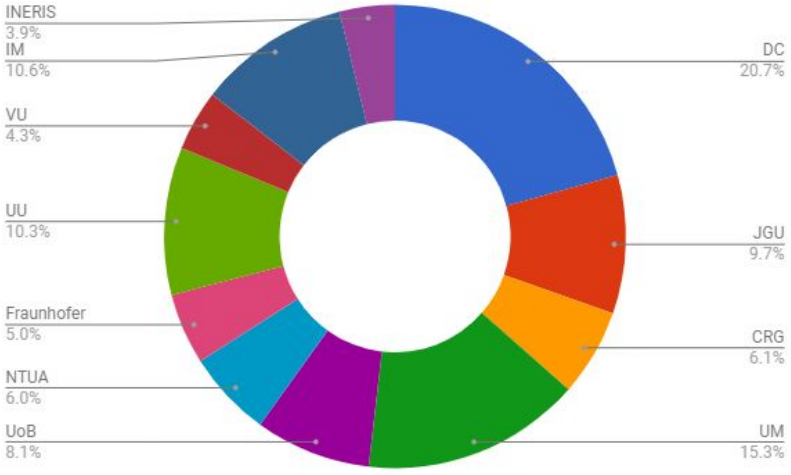


Figure 7. Budget distribution among Organisations

Besides the official budget reporting requested by the EC periodically (e.g. at M18 and M36), the management team has collected from partners updates on the costs estimation also at M12 through a budget reporting template. Thus, details on the person-months and the budget used per category of costs could be tracked and analysed. These estimations showed that 23.95% of the person-months were used at Month 12 (**Figure 8**) and that 21.72% of the total budget was spent. However, the details on the costs and the official numbers per partner are included in the formal financial report submitted by each partner at the M18 reporting period.

Figure 8. Overall estimation of person-months used at Month 12

[10] https://cordis.europa.eu/project/rcn/206759_en.html

Amendments

An amendment to the Grant Agreement was requested and finalised. The amendment concerned the removal of a beneficiary (P9. Medical University of Innsbruck (MUI)) and addition of a new beneficiary (P12. Vrije Universiteit Amsterdam, Netherlands (VU)), including also the change of bank account for payments, changes of Annex 1 (description of the action), changes of Annex 2 (estimated budget of the action) and changes of Annex 3 (accession forms). Following the Grant Agreement amendment, the Consortium Agreement was also changed accordingly. This amendment was needed because of the move of a principal investigator from Innsbruck to Amsterdam.

These changes did not affect the project implementation.

Meetings

The management process included also the organisation and facilitation of project meetings, including the kick-off meeting, the 1st annual face-to-face consortium meeting as well as periodic virtual meetings. The management meetings with WP leaders and the Executive Board were also organised in order to maintain a permanent communication line inside the consortium and assure that the project progress is aligned with its planning.

These meetings facilitated the discussion and decision on various management or scientific-related issues. The consortium meetings included project progress reports (i.e. updates from each WP leader), discussions and planning for future activities.

The agenda, the participation list and the meeting minutes were documented in a meeting report and shared within the consortium. The meetings organised so far are listed in **Table 5** (the list does not include the recurrent (bi-weekly, monthly) technical meetings organised within WPs or tasks). Details on the two face-to-face consortium meetings are presented in the following section.

Table 5. List of project meetings organised by M18

Type	Meeting	Place	Date	Observations
F2F	Kick-off meeting	Basel (Switzerland)	15-16 December 2016	Including General Assembly meeting
Virtual	Consortium meeting	Online	6 April 2017	Tasks and Deliverables progress reports at M4
Virtual	Executive Board and WP leaders	Online	5 September 2017	First meeting of the EB and WP leaders, focused on M12 progress and planning next phase
F2F	GA and 1st Annual Meeting	Basel (Switzerland)	20-21 November 2017	Included training activities jointly with OpenTox EURO meeting
Virtual	WP leaders meeting	Online	20 March 2018	Updates on the current activities and plan the next period
Virtual	Consortium meeting	Online	30 April 2018	Progress of the tasks, deliverables and milestones at M18

Consortium meetings

Kick-off meeting (F2F), 15-16 December 2016 (Basel, Switzerland)

The project was kicked-off with a meeting at the Technology Park in Basel, including scientific presentations and planning sessions for all WPs. All project partners were represented (20 project members from 9 Organisations). In the discussions it became clear that all partners agree that the only success criterion is the adoption of the infrastructure by the toxicology community. This can only be reached by integrating as many services as possible in the most accessible way and not by limiting it to the services developed by the partners. Additionally, usability testing by external users is needed during the complete development cycle. The meeting report and the presentations are available upon request.

Figure 8. Participants at kick-off meeting in Basel (15-16 December 2016)

General assembly and 1st annual meeting, 20-21 November 2017 (Basel, Switzerland)

The general assembly meeting agenda included discussion points on the amendments of the Grant Agreement and the Consortium Agreement due to the partner changes, the Executive Board members and their roles, the Scientific Advisory Board aim and member proposals). Next, the consortium meeting included updates from each WP leader on the task progress at M12. The main focus of the discussions was on the definition of case studies and related services integration, as well as on the documentation of the OpenRiskNet e-infrastructure and its support infrastructure. The consortium agreed on the list of case studies as well as on the next steps to be taken on the infrastructure development to support the case studies and to ultimately achieve the goal of the project. Further, the details on the Associated Partner Program were discussed and agreed. The Associated Partner Program was then launched officially during the OpenTox Euro conference that followed the consortium meeting. A press release entitled "*OpenRiskNet reveals concepts of harmonised APIs and semantic interoperability, provides first training*

units, and launches Associate Partner Program" was also published[11]. The meeting report and the presentations are available upon request.

Figure 9. Discussions at the annual meeting in Basel (20-21 November 2017)

[11] https://openrisknet.org/news/press-release-2017/

Reporting

The coordination, planning, completion, internal reviewing and submission of all deliverable reports following EC instructions was included within the management activities. This included also tracking the achievement and documentation of planned milestones. Also, the partners and WP leader were supported for fulfilling the technical and financial reporting for the period. In total, there are 30 Deliverables and 8 Milestones to be achieved and are distributed among different WPs as shown in **Figure 10**. During the first halftime of the project, 18 Deliverables were submitted and 7 Milestones were achieved (**Figure 11**). All Deliverables (reports and demonstrators) will be publicly available after formal approval by the EC office, except the Ethics reports. Each Deliverable is supported by a written report (pdf file) with links to additional supporting information or applications.

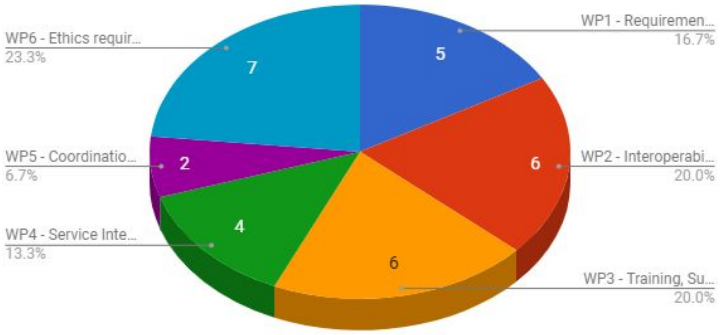


Figure 10. Distribution of Deliverables to different WPs for the whole lifetime of the project

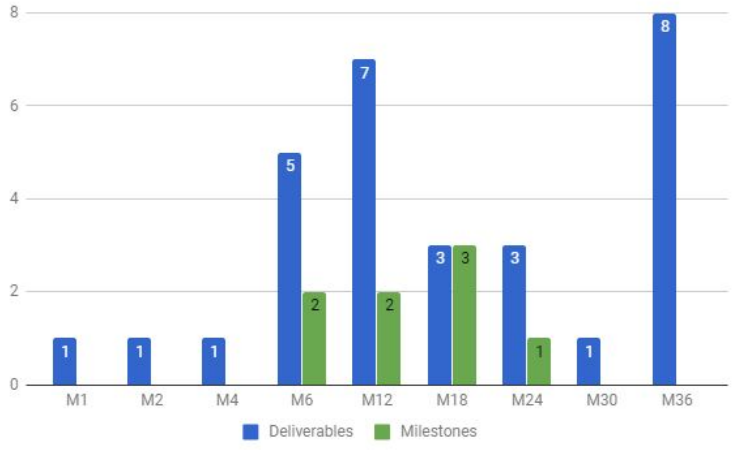


Figure 11. Distribution of Deliverables and Milestones at different months during the project

CONCLUSION

The management process implemented in OpenRiskNet successfully facilitated the collection, tracking and dissemination of knowledge generated by the first half of the project. Efficient measures were implemented for the project progress tracking, monitoring of the status of the tasks and the timely completion of the proposed deliverables.

GLOSSARY

The list of terms or abbreviations with the definitions, used in the context of OpenRiskNet project and the e-infrastructure development is available:

https://github.com/OpenRiskNet/home/wiki/Glossary