NETWORK OF THE
MARIE SKŁODOWSKA-CURIE ACTIONS
NATIONAL CONTACT POINTS

IMPACT & IMPLEMENTATION IN DOCTORAL NETWORKS

2. IMPACT

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2.1 Contribution to structuring doctoral training at the European level and to strengthening European innovation capacity

2.2 Credibility of the measures to enhance the career perspectives and employability of researchers and contribution to their skills development

2.3 Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities

2.4 The magnitude and importance of the project's contribution to the expected scientific, societal and economic impacts

2. Elements of IMPACT criteria

EU capacities

Non-academic sector

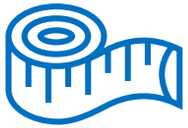
Sustainability

Career perspectives

Dissemination

Exploatation

Communication



Impact

IMPACT JOURNEY

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ACTIVITIES

produce

What you do

- R&I
- New Methods
- Training and Skill Development of DC
- Individual projects
- Secondments
- Collaborations

Etc.

OUTPUTS

through use by TG create

Products of your research

- Publications
- Prototypes
- Datasets
- Doctoral Theses
- Training materials
- Patents
- Dissemination and Outreach Materials

Etc.

OUTCOMES /RESULTS

through use by NTG create

Awareness & use of outputs

It is what happens, if your target group uses your outputs!

- they become more knowledgeable, or
- produce better products, or
- reduce the ecological footprint

IMPACT

Consequences of people using outputs

It is what happens by use of others than your primary target group

- Cultural
- Economic
- Educational
- Environmental
- Social
- Technological
- Scientific

2.1 CONTRIBUTION TO STRUCTURING DOCTORAL TRAINING AT THE EUROPEAN LEVEL AND TO STRENGTHENING EUROPEAN INNOVATION CAPACITY, INCLUDING THE POTENTIAL FOR:

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a) **meaningful contribution of the non-academic sector to the doctoral training**, as appropriate to the implementation mode and research field

- Demonstrate how the exposure of ALL the fellows to the non-academic sector is meaningful, i.e. it has sufficient duration and content to ensure:
  - the employability of the trained fellows in the non-academic sector
  - excellence and impact of the research training (local and the network wide training, including transferable skills),
  - complementary supervision,
  - hosting secondments (specific training),
  - networking opportunities, etc.
- Explain how the contribution of your non-academic sector participants to this particular programme is essential to improving inter-sectoral collaboration in research training in this area.

EXAMPLE – Contribution of the non-academic sector to the training and contribution to structuring doctoral training at the European level

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Contribution of the non-academic sector to the doctoral/research training

Non-academic partners will provide **state of the art training in drug design, biomarker discovery, exosome analysis, metabolism and therapeutics**. To achieve the ambitious objectives, all the ESRs will be seconded to SME/industry companies relevant to their chosen project across Europe for minimum periods of 3 months for intensive training in advanced technologies and research areas central to the theme. The SME/industry partners have been specifically identified as leaders in their field in terms of both technology and its application to cancer research and their involvement is essential for a full and integrated training program for the ESRs. will also **provide very useful networks of contacts to the researchers employed on the network grant for their future careers**. The specific capabilities of each SME/industry partner are incorporated into the programme overview. A potential impact of the close collaboration between the academic and non-academic partners may be the development of joint PhD programmes in future and also the exchange of other researchers between the sectors.

Structuring training across Europe

The programme has been designed with close reference to the EU Principles for Innovative Doctoral Training[32] and it is expected that the programme will contribute to the mainstreaming of a multidisciplinary, intersectoral, structured approach to doctoral training in the host institutions and beyond. will provide evidence of the benefit of a multidisciplinary, intersectoral approach to PhD training to support changes in curriculum in the participating beneficiaries. will also demonstrate that formal links between academic and industry partners in the design of multidisciplinary structured doctoral programmes at a European level are an invaluable resource in the training of future ESRs. A number of PIs in the academic beneficiaries are already responsible for doctoral curriculum design. For example, was the Co-ordinator of the cancer stream of the very successful PhD programme 'Molecular and Cellular Mechanisms underlying inflammatory processes' in (2011-2015). ( ) is Co-ordinator of the structured doctoral programme in Dentistry and is Director of the School of Doctoral Programmes for the entire .
The consortium also plans to interact with current and future related and research actions funded by the Commission, as described below

CONTRIBUTION OF THE NON-ACADEMIC SECTOR

+ The contribution of the non-academic sector to the research and training part **is credible** and sound, including **transfer of fundamental skills**, daily collaboration, **soft skills** and the planned **network-wide training activities.**

+ **The coaching and mentoring contributions** of the non-academic partners are appropriate and beneficial for the doctoral candidates' development. Also, the **diverse range** of non-academic partners involved in the training enriches the programme.

+ **The non-academic secondments** would enable the researchers to gain intersectoral **experience** and acquire hands-on training and new **competences** relevant to their profiles.

CONTRIBUTION OF THE NON-ACADEMIC SECTOR

- The proposal does not sufficiently describe the **contribution of the non-academic sector** to the training on transferable skills.
- The contribution of the non-academic sector in the research and training **is not convincingly established**. i.e. the proposal fails to describe in detail the **meaningful** DCs exposure to the non-academic sector.
- The contribution of non-academic institutions participating to the programme **is not sufficiently meaningful**, for example there are **only few details** on how the non-academic partners will deliver training, contribute with secondments or other activities enhancing the proposal's impact.

- The contribution of the non-academic sector in the training programme **is limited**.

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b) **developing sustainable (=lasting) elements of doctoral programmes**

- Sustainability of training programmes and transferable skills training offered at local or network-wide level
- Sustainable cooperation/ long lasting collaboration and secondment opportunities
- For JD proposals, explain how you will continue the joint degree process in the consortium after the JD project is finished, the possibilities for the new collaboration projects or further funding opportunities

DEVELOPING SUSTAINABLE ELEMENTS

+ Several actions to develop sustainable structures for **future doctoral training** are precisely specified and will be **considered for continuation after the funding period** based on assessments at the end of the project. Moreover, the proposal convincingly explains how the current structured doctoral programme **reflects previous successful collaborations** between partners and their established platforms that will be sustained in the future.

+ Sustainable elements of doctoral programmes, such as opening the network **to external PhD students** and formulating **training agreements with external academic partners**, are sufficiently planned.

+ Sustainable **cooperation and long-lasting** collaboration are adequately addressed in the proposal.

DEVELOPING SUSTAINABLE ELEMENTS

- The plans for the sustainability of the doctoral network programme **beyond the funding period are not exhaustively explored**, e.g. in terms of using the training programme to shape future doctoral education.
- The ability of the proposal to develop sustainable elements of doctoral programmes **has not been demonstrated** convincingly enough.
- The proposal **does not sufficiently address** how the elements of the proposed doctoral training could **last beyond the end** of the action and how cooperation among partners could also be extended.
- There **is limited evidence** of the potential contributions of the doctoral network **to the development of sustainable elements** of doctoral programmes.

You can add the two following sub-headlines:

c) **contribution to structuring doctoral/ early-stage research training at the European level**

- There are two agreed set of ‘rules’ for doctoral/ research programme elements: Salzburg II Recommendations & Principles for Innovative Doctoral Training, which derives from the Salzburg II Recommendations
- Explain how your programme adheres to those ‘rules’ – i.e. take the seven Principles for Innovative Doctoral Training and explain how your DN incorporates each of those Principles
- Explain how your programme will help the further development and spreading of best practice in European collaborative research training programmes
- Describe how you will continue the programme after the DN is over e.g. seeking further funding or at a minimum informally continuing the collaboration

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d) **strengthening European innovation capacity**

- Explain how the research programme and the doctoral candidate's work (including dissemination/ exploitation/communication/ outreach activities) will contribute to Europe's economy and/ or society
- Explain how the research and training programme will help bringing ideas to market. The role of the participants from the non-academic sector in this respect should be described, either in terms of research commercialisation, training in entrepreneurship/ tech transfer to the fellows, etc.
- Expand on link to EU research/ policy goals
- If your programme builds on an existing DN, COST Action or other funded project, explain how it does so, making it very clear that you are proposing to go beyond the work already funded by those projects
- Could your research contribute to the development of a new European Standard? If yes, describe this briefly here and explain the details in Section 2.3 under 'Exploitation'

EXAMPLE – Contribution to strengthening European innovation capacity

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2.2.2 *Strengthening European innovation capacity*

will strengthen European innovation capacity specifically in terms of contributions to European capabilities for cancer diagnostics and therapeutics for OOC. **Patentable and commercially exploitable discoveries relevant to OOC are expected to arise from the project**, including new diagnostic kits (swab-based genotyping) for diagnosis and therapy monitoring, and novel therapeutics. Despite efforts to screen for and pre-operatively select OAC patients for potentially curative surgery, the five-year survival rate in early stage disease is only 25-35%. The incidence of OAC in men has also risen 50% in the last 25 years[33]. This is due to late diagnosis of disease and resistance to chemotherapy. In order to identify novel therapeutic agents and improve outcomes for OOC patients, there is an urgent need to discover biomarkers for early detection of the disease and to better understand the molecular basis of metabolic transformation and drug resistance in OOC. The ambitious goal set by the 'Commission Communication on Action Against Cancer: European Partnership' is to reduce cancer incidence by 15% by 2020[34]. will contribute to this goal by early diagnosis and improved therapy of OOC. **Therapeutic benefits from the research programme are promising since a number of molecular drug targets and potential biomarkers have already been identified by pilot experiments** (see section 1.1.4).

There will also be more general impacts in terms of training researchers to deliver innovation in basic and applied research and bringing together European academics and industrialists. will contribute to delivering on the commitments of the Europe 2020 Flagship Initiative - Innovation Union,[35] in particular by **promoting excellence in education and skills development** through the proposed doctoral training programme. It will contribute to establishing Europe as a world-class science performer by generating a talent pool of internationally mobile researchers in the field of cancer research, an area of enormous significance to Europe, both societally and economically. The highly-talented cohort of researchers with international and intersectoral experience will greatly enhance the capacity of Europe to address the enormous challenge of cancer diagnosis and therapy. will also contribute to **removing the obstacles to innovation by addressing the skills shortage and the "knowledge gap" between academic researchers and the commercial world.** The project will contribute to a framework to deliver on the commitment to revolutionise how the public and private sectors work together by promoting the flow of researchers and expertise between the sectors.

Through the project, existing links between academia and industry will be strengthened and new links forged. This will not only open up broader career paths for the ESRs, but will also **drive more rapid, more effective translation of research findings into products** that will enhance cancer diagnosis and management, and will **deliver growth in revenue and employment** for European SMEs in the life sciences.

has the capacity to progress innovative multiplex companion diagnostics, with the inclusion of OOC genetic signatures, to the market. For example, partner organisation has developed a microarray-based gene signature test for stage II colon cancer recurrence which was launched on the market by as GeneFX colon and a number of additional tests for breast, ovarian and prostate cancer are in development pipeline.

STRENGTHENING EUROPEAN INNOVATION CAPACITY

+ The action significantly contributes **to structuring doctoral training at the European leve**l and **strengthening European innovation capacity** through **collaborative partnerships** with other research networks. Plans to make training concepts and materials **openly accessible** to PhDs outside the doctoral network and **collaborate** with other doctoral networks are well-thought-out and effective.

+ The proposal demonstrates the structuring of a doctoral training at the European level, with a sufficient **contribution given by the non-academic** associated partners.

STRENGTHENING EUROPEAN INNOVATION CAPACITY

- The contribution of the proposed training and research programme to structuring doctoral training at a European level **is not adequately highlighted.**

- The project provides insufficient information about **how the project could strengthen European innovation capacity**; the discussion is kept at a very **general level**.

STRENGTHS & WEAKNESSES

MSCA-NET

+ The contribution to structuring doctoral training at the European level is convincing and the benefits towards academic and non-academic sectors are very well sustained. European innovation capacity is expected to go beyond the state of the art in the specific field of perinatal cells in regenerative medicine.
+ The proposed structure of double doctorates in topics of cutting edge research, with the exposure to varied expertise required to reach a common goal, contributes significantly to the strength of this proposal in terms of its impact in structuring doctoral training at the European level.

+ Project will strengthen substantially European innovation capacity, and promises to foster Europe's competitiveness in circular agriculture/ food and feed sectors by narrowing the gap between industry and academia.

- Sustainability of the research doctoral programme with respect to already established circular feed systems in various university setting is not fully elaborated.
- Concrete measures to ensure sustainability and durability of the doctoral program are only slightly outlined.

2.2 CREDIBILITY OF THE MEASURES TO ENHANCE THE CAREER PERSPECTIVES AND EMPLOYABILITY OF RESEARCHERS AND CONTRIBUTION TO THEIR SKILLS DEVELOPMENT

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- **Explain the impact of the research and training on the fellows' careers prospects.**
- Describe the potential employment sectors that the doctoral candidates might end up working in. Consider both academic and non-academic career opportunities.
- Present an analysis of how the elements of the programme will make them employable in these sectors, e.g.:
  - Research Training
  - Transferable Skills Training
  - Secondments and/ or other opportunities for exposure to other organisations (e.g. networking opportunities)
  - Communication/ Dissemination/ Public Engagement/ Exploitation activities

2.2 CREDIBILITY OF THE MEASURES TO ENHANCE THE CAREER PERSPECTIVES AND EMPLOYABILITY OF RESEARCHERS AND CONTRIBUTION TO THEIR SKILLS DEVELOPMENT

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- Do not repeat how these skills will be delivered, instead focus on the impact of the skills on the doctoral candidate's employability
- Make a strong link between your programme's elements, the EU policies about researcher careers/ employability, and any sectoral policies referring to a skill gap in the relevant sector.

TRANSFERABLE SKILLS AND COMPETENCES

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Career Development	• Career planning and assessment • CV writing • Interview techniques • Job application • Job searching • Skills documentation and verification • Skills gap identification and development
Cognitive	• Abstraction and creativity • Analysis and synthesis • Critical thinking • Organisation and optimisation • Problem-solving
Communication	• Academic writing • Formal correspondence • Oral presentation • Science for non-technical audiences • Science for policy making • Social media and webinar usage
Digital	• Information accessing and retrieval • Information presentation and visualisation • Information processing and exchange • Programming • Software usage and development
Enterprise	• Commercialisation • Entrepreneurship • Innovation • Intellectual Property Rights (IPR) • Knowledge transfer within and across sectors • Legal and business standardisation • Patenting
Interpersonal	• Conflict management • Discipline and perseverance • Diversity awareness • Independence and responsibility • Leadership
	• Negotiation • Networking • Rhetoric and argumentation • Stress tolerance • Taking on responsibility • Teamwork
Mobility (intersectoral and international mobility)	• Intercultural awareness • Intercultural communication • Intersectoral experience • Intersectoral awareness • Foreign language skills
Research (research intensive and non-research intensive)	• Citizen Science • Data analysis • Disciplinary knowledge and terminology • Ethics and integrity • Grant application writing • Interdisciplinarity • Literature use and management • Open Access publishing • Open Data management • Open Education • Open Evaluation • Open Licensing • Open Methodology • Open Source • Project management • Time management
Teaching and Supervision	• Course development and assessment • Exam preparation and assessment • Mentoring and supervising students • Teaching and learning theories and methods

EXAMPLE – Skills needed and obtained

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Career	Skills	
	Core set	**Complementary set**
Clinical practice	hearing sciences + impairment; hearing devices; speech and language processing; communication skills; experience of clinical challenges facing practitioners and patients	basic programming; basic signal processing in hearing devices; basic knowledge of speech technology
Engineer in the specialist communication aid industry	strong programming; human-computer interaction; interpersonal skills; experience of clinical challenges facing practitioners and patients	general knowledge of speech synthesis; some knowledge of signal processing
Academic/clinical research (hearing science)	hearing sciences; speech perception; speaking effort and styles; communication skills; research methods; statistics; some experience of clinical challenges facing practitioners and patients	moderate programming; general knowledge of signal processing techniques; basic knowledge of speech technology
Engineer in the specialist hearing aid industry	signal processing; embedded systems; experience of clinical challenges facing practitioners and patients; fundamentals of hearing-device provision and hearing science	communication skills; good programming; basic knowledge of medical product regulations (CE marking); basic knowledge of speech synthesis
Spoken language technology engineer	exceptional programming; signal processing; machine learning; speech synthesis	communication skills; general knowledge of hearing science; awareness of clinical challenges facing practitioners and patients
Academic research (engineering)	strong programming; signal processing and/or machine learning; communication skills	general knowledge of hearing science; awareness of clinical challenges facing practitioners and patients

Figure 3.1a: The initial career profile templates. The core set covers essential skills that are needed to gain employment in that sector, whereas the complementary set describes additional skills that will set ESRs above graduates from other PhD training programmes. All ESRs will also develop their creativity and innovation skills.

MEASURES TO ENHANCE THE CAREER PERSPECTIVES - 1

+ The impact of the research and training on the doctoral candidates' career prospects **is well described** including **interdisciplinary scientific competences, transferable skills** and possibility for **international networking**, in line with the EU's Principles for Innovative Doctoral Training.

+ The proposal clearly outlines the potential impact of the research and training on the career prospects of doctoral candidates. This includes **professional advancement**, **intersectoral exposure** to various entities, acquisition of **specialised knowledge**, transferable **skills** training, and ensuring diversified career opportunities with multiplier effects across academia, governments, and businesses.

MEASURES TO ENHANCE THE CAREER PERSPECTIVES - 2

+ The impact of research & training on DCs career prospects is described **very convincingly** and with **high level of detail** with credible measures. These positive effects are amplified by DCs exposure to **intersectoral training** in globally leading institutes and companies and to expertise in industrial requirements. **The Personal Career Development Plan** to monitor DCs scientific and personal development is also benefits.

+ The technical and transferable skills acquired by the doctoral candidates during the proposed action will certainly **improve their employability** in academia and/or industry.

MEASURES TO ENHANCE THE CAREER PERSPECTIVES - 1

- The proposal does not provide **detailed** tangible examples or direct connections between the **training programme** and potential enhancement of DCs **employability**.
- **Career prospects** are not sufficiently **envisaged** with significant concrete provisions.
- Measures to enhance the career perspectives and employability of researchers are not sound enough, for example, the **description of research skills and knowledge acquired is too generic**.
- Measures to enhance the **employability perspectives in industrial environments** are not well elaborated. The impact of industrial and entrepreneurial training is too limited.

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Which competences will fellows develop in the frame of the DN? In what way are these competences relevant to their future career development (“employability”)? Consider their potential career paths other than working in a university. (5’)

Note your ideas and exchange with us (5’)

Keep in mind: scientific & transferable skills -> Connection with Section 1.2

STRENGTHS & WEAKNESSES

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+ The combination of skills and experience will make the young researcher an attractive employee to both private and public sectors through concrete measures training in translational research from academia and industry, their career prospects and employability will be increased convincingly.
+ The proposed research and training will have a significant impact on the long-term career perspectives of the doctoral candidates because, among other advantages, they will grow their expertise and skills in a very promising research field that is still in its infancy.

- Additional skills to the entrepreneurial ones are not sufficiently described to convincingly justify how they will enhance DC's employability.
- Despite the convincing contribution of the project to the improvement of transferable and non-academic skills of the doctoral candidates, very little emphasis is given to improving their methodological skills.

2.3 SUITABILITY AND QUALITY OF THE MEASURES TO MAXIMISE EXPECTED OUTCOMES AND IMPACTS, AS SET OUT IN THE DISSEMINATION AND EXPLOITATION PLAN, INCLUDING COMMUNICATION ACTIVITIES

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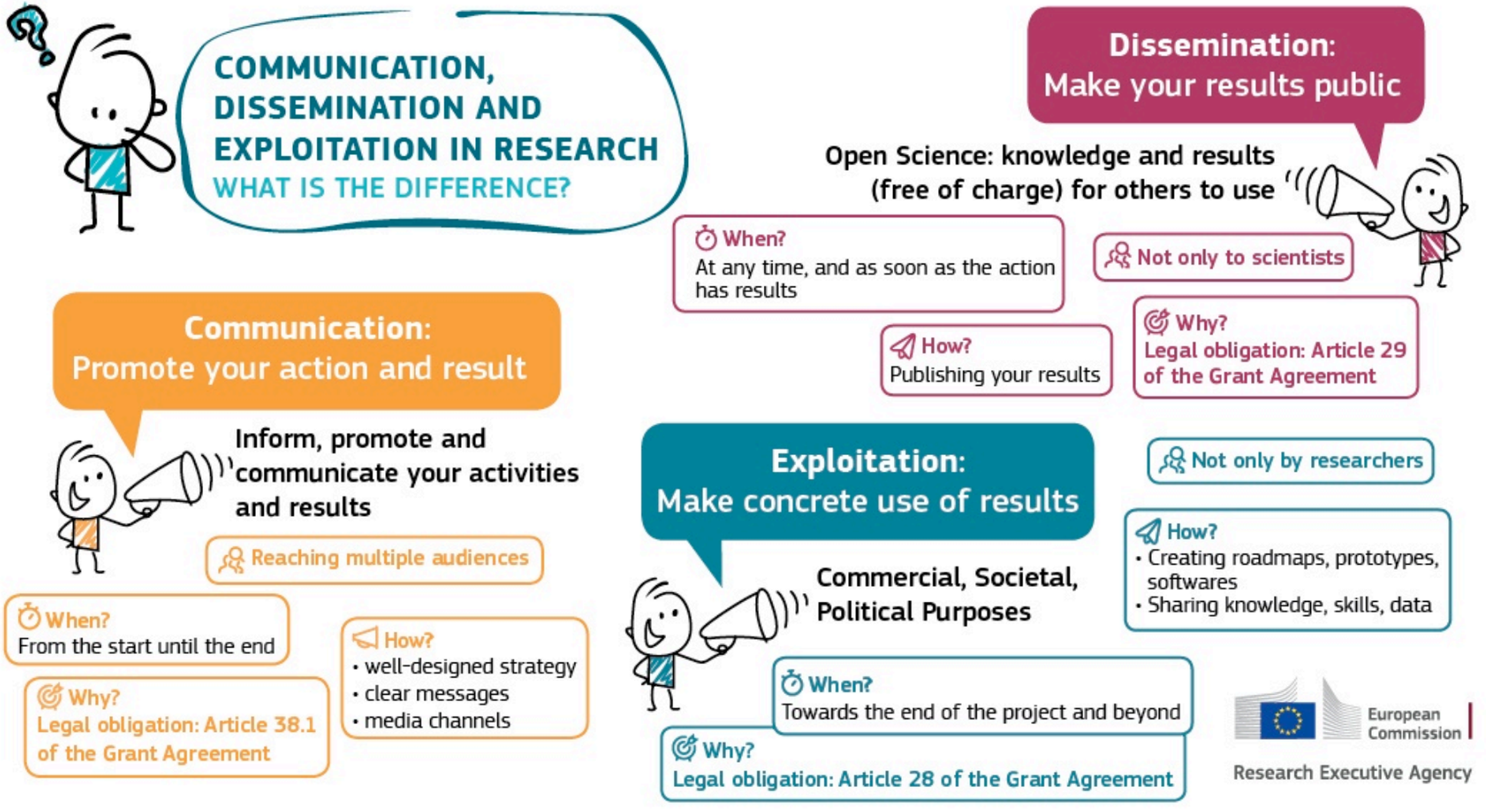

2.3 SUITABILITY AND QUALITY OF THE MEASURES TO MAXIMISE EXPECTED OUTCOMES AND IMPACTS, AS SET OUT IN THE DISSEMINATION AND EXPLOITATION PLAN, INCLUDING COMMUNICATION ACTIVITIES

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- **Plan for the dissemination and exploitation activities, including communication activities:**
  - Describe the planned measures to maximise the impact of your project by providing a first version of your '**plan for the dissemination and exploitation including communication activities**'.
  - Regarding communication measures and public engagement strategy, the aim is to inform and reach out to society and show the activities performed, and the use and the benefits the project will have for citizens.
  - Activities must be strategically planned, with clear objectives, start at the outset and continue through the lifetime of the project.
  - The description of the communication activities needs to state the main messages as well as the tools and channels that will be used to reach out to each of the chosen target groups.

THE MAIN DIFFERENCES BETWEEN COMMUNICATION AND DISSEMINATION

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Dissemination and exploitation

- About results only
- When results are available and after the end of the project
- Potential professionals that may use the results in their own work
- Enable use and uptake of results
- Publications, conference presentations…

Communication and public engagement

- About the project and results
- Starts at the beginning of the project
- Multiple audiences
- Inform and reach out to society, show the benefits of research
- General media, social media, different type of events, popular science publications

DISSEMINATION

+ The proposal presents a **credible and well-structured plan** for dissemination. The dissemination activities are **achievable** and **measurable** with appropriate **indicators**. Scientific target groups are well considered.

+ The dissemination of the scientific results is well planned with appropriate **key performance indicators**.

+ The inclusion of **a table specifying** academic journals, conferences, and practice-oriented fora adds concreteness to the strategy, enhancing its overall effectiveness.

DISSEMINATION

- The dissemination, exploitation and communication plans are **inadequately developed**. For example, they lack a **clear timeline** and sufficient information on **measurable indicators** to attain the objectives. **Tools** and **channels** for reaching the chosen target groups have also not been explained in sufficient detail.
- While a large number of different dissemination, communication and outreach activities is presented, the proposal insufficiently details **how these activities will be monitored**.
- The proposal lacks a credible and convincing articulation of the **measures that will be used to assess the quality and impact** of the dissemination and communication activities.
- Dissemination does **not sufficiently address policy makers**.

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Protection of the intellectual property (IPR)!

Further internal research	• The results coming out of the project can be applied to further research in the field and beyond
Collaborative research	• The results can be used for building/contributing to collaborative research projects
Product development	• Results can be used for developing or contributing to a product, process, technique, design, etc.
Standardisation activities	• Results could be used to develop new standardization activities or contribute to ongoing work
Spin – offs	• A separate company will could be established as a result of the research results
Engagement with communities/end users/policymakers	• Describe the activities to ensure that relevant societal actors will benefit from your project. For example, results will be used in policy briefings to impact on policy

- **Strategy for the management of intellectual property,** foreseen protection measures, such as patents, design rights, copyright, trade secrets, etc., and how these would be used to support exploitation.
  - Where relevant, remember that the results can… …idely disseminated AFTER IP protection has ta… …your Technology Transfer Office on these m…
  - Outline plans to exploit any IP/ comm… programme. Briefly describe the role… similar in helping you to commerciali…
  - Remember that this is the Impact sect…
  - Describe the potential impact of exploiting… research results.

European IP Helpdesk - a first-line intellectual property service providing free-of-charge support to help European SMEs and beneficiaries of EU-funded research projects manage their IP in the context of transnational business or EU research and innovation programmes.

EXPLOITATION

+ The potential exploitation of results is thoroughly **elaborated** upon, with well-described strategy for effective **intellectual property management**, including the establishment of an **exploitation working group** and a clear **process** for reporting and evaluating **commercial potential**, enhancing the project's ability to capitalise on intellectual property and **involving relevant stakeholders**.

+ The proposed **exploitation strategy**, which identifies some **barriers**, is credible and well-articulated to address the **quintuple helix sectors**. The **key exploitable results** are **well-presented** and IP management strategy is well thought out.

+ The proposal foresees adequate measures for the **management of intellectual property rights.**

EXPLOITATION

- The exploitation plan is **insufficiently elaborated**, without a clear analysis of **potential stakeholders** and a credible **plan** to approach them.
- The proposal fails **to sufficiently identify** and describe potential exploitation op**portunities** and **mechanisms**.
- Some of the targeted **non-academic audiences** are not clearly presented.
- Furthermore, there is **an insufficient strategy** for involving key stakeholders who could **amplify the project's impact**.
- The plans for exploitation are **somewhat lacking ambition**.

EXAMPLE – Communication activities

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Quality of the proposed measures to communicate the project activities to different target audiences

Communication and public engagement strategy of the project: This has been developed with a number of key audiences in mind, including cancer patients, future PhD candidates and the general public. Involvement of the ESRs in communication and public engagement is central to the strategy - all ESRs will be involved in a minimum of two outreach activities per year. The aim will be to raise public awareness of cancer research and more generally increase public engagement with and understanding of science, as well as developing ESRs' understanding of public interest and science-related priorities. The impact of the outreach activities for both the public and ESRs will be assessed by a number of methods, including questionnaires and interviews.

Web-based outreach activities: A project website will be created as the central online dissemination tool. ESRs will regularly contribute content to the site, as well as contribute to a six-monthly e-newsletter aimed at informing the general public about OOC and about the project findings in particular. A Wikipedia page will also be created and maintained by the ESRs. Social media accounts (Facebook, Twitter) will be created and maintained by ESRs and each will contribute to regular blog posts giving an update on their research and training activities. The impact of these activities in raising awareness will be measured by numbers of hits to the website, and reach of the social media accounts. To measure the impact on increased engagement metrics will include numbers of retweets, comments and replies.

Media: Networks within the Communications Offices of all partners will be leveraged to establish a project presence in the popular media. For example, a press release will be issued at the project kick-off. Where publications are likely to attract wider public interest, authors will work closely with Communications Offices to maximise coverage in the popular media. Many investigators already have a proven track record in public engagement. For example, ( ) currently has a weekly slot with a national broadcaster. This impact will be measured by numbers of media articles and radio/television spots.

Outreach to OCC patient groups: The research programme is of particular relevance to OCC sufferers, their families and friends. Each year, hosts an information day for members of the Oesophageal Patient Association and the Oesophageal Cancer Fund. ( ) will chair an outreach session at this information day (M18), where all ESRs will present their research to a lay audience. This session will educate the public about the existence of European projects to improve OOC diagnosis and treatment, while also offering ESRs with an opportunity to engage with those who may benefit from their work, potentially inspiring a deeper interest in the field of cancer research. In addition, ESRs based at will have the opportunity to engage with the public through the Forum - ESRs will give lab tours and talks to members of the Forum in order to promote greater public understanding and involvement in cancer research.

Outreach to secondary school students: Inspiring the next-generation of PhD candidates requires early exposure of cutting-edge science. All the host beneficiaries will be involved in outreach programmes to secondary school students. For example, currently the School of Biochemistry & Immunology, , run a 'transition year' programme where secondary school students (15-16 years old) spend a week in laboratories within Each secondary school student spends time participating in scientific activities and group activities with talks, quizzes and visits to other scientifically relevant sites on the campus. Similar schemes will be set up by other beneficiaries. Impact of these outreach activities will be measured through questionnaires distributed to students before and after the events.

***Science Gallery and related global network*:** is fortunate to have direct access to the world-leading based in . Since 2008, the has attracted more than 1.9 million visitors to 34 exhibitions, ranging in theme from contagion to the future of fashion. It has recently partnered with Google to establish a global network of science galleries, modelled on the approach to engaging young people in science. will engage in debates and information events run by the . have considerable experience in measuring impact of science communication activities.

EU Researchers' Nights and other local events: Where possible, ESRs will participate in on-going initiatives run by the beneficiaries. For example, ESRs will participate in EU Researchers' Nights, such as those hosted by and . Live links between , and the other beneficiaries will allow all ESRs to participate in both Nights. led by the , was awarded funding to host an 'EU Researchers' Night' event in 2014 and 2015. The event had over 7,000 attendees each year and features a wide range of interactive and hands-on activities for the general public that aim to challenge perceptions held by the general public about researchers, to promote research as an exciting career option, to demonstrate creativity and innovation in research across all disciplines and to show that researchers are dynamic contributors to society. It is anticipated that the event will continue to be held annually. Marie-Skłodowska Curie Fellows are central to the organisation of this event, and ESRs recruited to at will organise events, present their research and have representation on the Steering Committee for future EU Researchers' Nights. Similarly, is partner in the Researchers' Night , and every year in September, organizes a number of initiatives dedicated to young researchers , in which ESRs based at will participate. Impact assessment through qualitative and quantitative measures is a key deliverable of Researchers' Nights and ESRs will contribute to this.

***Marie Sklodowska-Curie Open Day*:** All ESRs will organise and participate in the Open Day (M36), helping them develop project management and event organisation skills. Attendees will include the general public and other interested lay audiences, such as patient group representatives. The event will include presentations from the ESRs on their research results, as well as open question sessions. The aim of the Open Day is to communicate the project findings and give ESRs an opportunity to develop communication skills. Impact will be measured through numbers of attendees and quality of discussions.

COMMUNICATION

+ The communication plan is good with certain appropriate activities addressing **different target groups** and also includes appropriate **indicators** (number of events, details regarding titles/subjects) for proper monitoring.

+ The communication activities **to the general public**, students and patient charities include appropriate **outreach activities** that are very **well described**.

COMMUNICATION

- The communication **towards civil society** is not appropriately addressed, namely regarding the **direct engagement** with the public to showcase activities, results and their benefits for citizens.
- The communication activities for the wider public and their **timeline** are presented in a rather **general manner**, and it is not clearly articulated **how materials** for general outreach will be tailored effectively **to engage** a broader audience.

Dissemination and Public Engagement

MSCA-NET

Scientific dissemination activities:

- Journal publications
- Conferences/workshops
- Book Chapters
- Publication in Scientific Newsletters
- Patents
- Seminar talks
- Scientific talks

Dissemination tools/materials:

- Website
- Social media
- Newsletters
- Brochure
- Flyers

Public engagement activities:

- Press articles
- Visits to schools/universities
- Radio/TV talks
- Visit to end-users/public
- Video/audio clips
- Café Scientifique
- Open/Info Days
- Science Festivals/weeks

Source: ANSWER ITN project

+ The dissemination and communication strategy is extensive, presenting a credible and structured plan for the exploitation and dissemination of outputs, which is based on the effective use of appropriate on and offline tools to target different audiences and relevant performance indicators. Sound dissemination and exploitation policies are included: i.e. project's research findings will remain available on the project website after its completion.
+ The proposal provides a comprehensive strategy for the management of intellectual property and foresees protection measures, consortium and confidentiality agreements.

- Given the current strenuous and rather long publication processes, the expectation of doctoral candidates to have two accepted articles by the end of the doctoral training (M48) might be slightly ambitious.
- Outreach activities to the public, health care providers, decision-makers and other actors in society are generic and insufficiently considered.
- The exploitation strategy is not sufficiently discussed, namely at the level of some of the envisaged demonstrators.

2.4 THE MAGNITUDE AND IMPORTANCE OF THE PROJECT'S CONTRIBUTION TO THE EXPECTED SCIENTIFIC, SOCIETAL AND ECONOMIC IMPACTS (PROJECT'S PATHWAYS TOWARDS IMPACT)

MSCA-NET

- Provide a narrative explaining how the project's results are expected to make a difference in terms of impact, beyond the immediate scope and duration of the project.
- Be specific, referring to the effects of your project, and not R&I in general in this field. State the target groups that would benefit.
  - Expected scientific impact(s), e.g. contributing to specific scientific advances, across and within disciplines, creating new knowledge, reinforcing scientific equipment and instruments, computing systems (i.e. research infrastructures);
  - Expected economic/technological impact(s), e.g. bringing new products, services, business processes to the market, increasing efficiency, decreasing costs, increasing profits, contributing to standards' setting, etc.
  - Expected societal impact(s), e.g. decreasing CO_2 emissions, decreasing avoidable mortality, improving policies and decision-making, raising consumer awareness.

2.4 THE MAGNITUDE AND IMPORTANCE OF THE PROJECT'S CONTRIBUTION TO THE EXPECTED SCIENTIFIC, SOCIETAL AND ECONOMIC IMPACTS (PROJECT'S PATHWAYS TOWARDS IMPACT)

MSCA-NET

	Short -term (output)	Medium - term (outcome)	Long - term (impact)
High-quality new knowledge	Number of peer-reviewed scientific publications	Citation index of peer reviewed publications resulting from the Programme	Number and share of peer reviewed publications from projects that are core contribution to scientific fields
Addressing EU-policy priorities	Number and share of outputs aimed at addressing specific and identified EU policy priorities and global challenges	Number and share of innovations and scientific results	Aggregated effects from use of funded results, including contribution to policy making cycle
Innovation-based growth	Number of innovative products, processes of methods and IPR applications	Number of innovations including awarded IPRs	Creation, growths and market shares of companies having developed innovations
Example	Successful demonstration trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management	At least 9 European airports adopt the advanced forecasting system that was demonstrated during the project	15% increase of maximum passenger capacity in European airports

2.4 THE MAGNITUDE AND IMPORTANCE OF THE PROJECT'S CONTRIBUTION TO THE EXPECTED SCIENTIFIC, SOCIETAL AND ECONOMIC IMPACTS (PROJECT'S PATHWAYS TOWARDS IMPACT)

MSCA-NET

- Only include such outcomes and impacts where your project would make a significant and direct contribution. Avoid describing very tenuous links to wider impacts
- Give an indication of the magnitude and importance of the project's contribution to the expected outcomes and impact. Provide quantified estimates where possible and meaningful
- 'Magnitude' refers to how widespread the outcomes and impacts are likely to be. For example, in terms of the size of the target group, or the proportion of that group, that should benefit over time
- 'Importance' refers to the value of those benefits. For example, number of additional healthy life years; efficiency savings in energy supply

STRENGTHS & WEAKNESSES

MSCA-NET

+ Expected scientific impacts are relevant for knowledge of the role of microbiome in a circular production system.
+ The proposal has the potential to deeply impact both academic and policy sectors by providing human capital and expert knowledge in the cutting edge field of informality and precarity that is of interest to governmental, NGO, business and scientific stakeholders.
+ Proposal will impact European policies, particularly Green Deal, by improving agro-ecosystem planning and sustainable agricultural production in circlular feed systems.

- The description of the potential scientific, technological, economic and societal impact is broad and generic without focusing on specific results generated from the proposal.
- Although the proposal addresses the expected societal and economic impacts in a good way, how the project's results will make a difference in terms of impact beyond the immediate scope and duration of the project is not sufficiently demonstrated.

SCIENTIFIC IMPACTS – 1

+ The proposal includes a credible and well **addressed analysis** of the relevant scientific impacts of the proposal results, **beyond** the immediate scope and duration of the project.

+ Through the development of modern and recent techniques in climate science, the proposal is expected to have a significant scientific impact **on the improvement of the forecasting capabilities of the models.**

+ The proposal provides an ambitious vision of its anticipated scientific impact regarding animal domestication and early husbandry practices and consequences. Its diverse research outputs would **improve cross-disciplinary communication,** understanding and practice within this research field. **The bioarchaeological digitization** project is also highly credible.

SCIENTIFIC IMPACTS – 1

+ The development of the proposal involves well-defined and justified expected scientific impact regarding **the improvement and new strategies for therapies in the context of vascular medicine**, with a **wide range of applications** in a neglected area that extends beyond the scope of this project.

+ A convincing list of scientific, economic/technological and environmental/societal impacts is provided with claims that are credible and well justified. These impacts include bringing **new business opportunities to the sector** and contribute to the **sustainability and circularity of the construction industry.**

+ The project's results are expected to create lasting scientific impact by significantly **improving forecast and mitigation of salt decay in existing and new materials.** This is particularly justified by scientific advances regarding **test procedures** and **techniques for the experimental assessment** of resistance to salt decay.

SOCIETAL IMPACTS

+ Some relevant societal impacts from the research are demonstrated.

+ The expected societal impacts **are substantial**, especially as the preparedness of society to **extreme climate events** is concerned.

+ The involvement of the doctoral candidates in a number of **educational initiatives in African countries**, both at high school and doctoral levels, will generate substantial societal impact.

+ The societal impact of the proposal is convincing, as it will indirectly **contribute to the education and research of a relatively large number of experts** in responsible LLM applications.

+ The proposal includes a clear and comprehensive description that effectively communicates the expected social impacts, emphasizing the potential contributions **to global health**, **alignment with sustainable development goals**, and **the training of a skilled workforce**.

ENVIRONMENTAL IMPACTS

+ Positive environmental impacts are expected form the use of environmental benign materials developed in the proposal for the **substitution of traditional materials currently** used for energy harvesting.

- The description addresses very well the expected societal impact, for example, it presents significant means to reduce **environmental footprint** by replacing current disposable battery use and enable CO2 reduction and H2 production
- The proposal makes a convincing case regarding the expected societal and environmental impacts **connected to CO2 emission mitigation**.

ECONOMIC IMPACTS

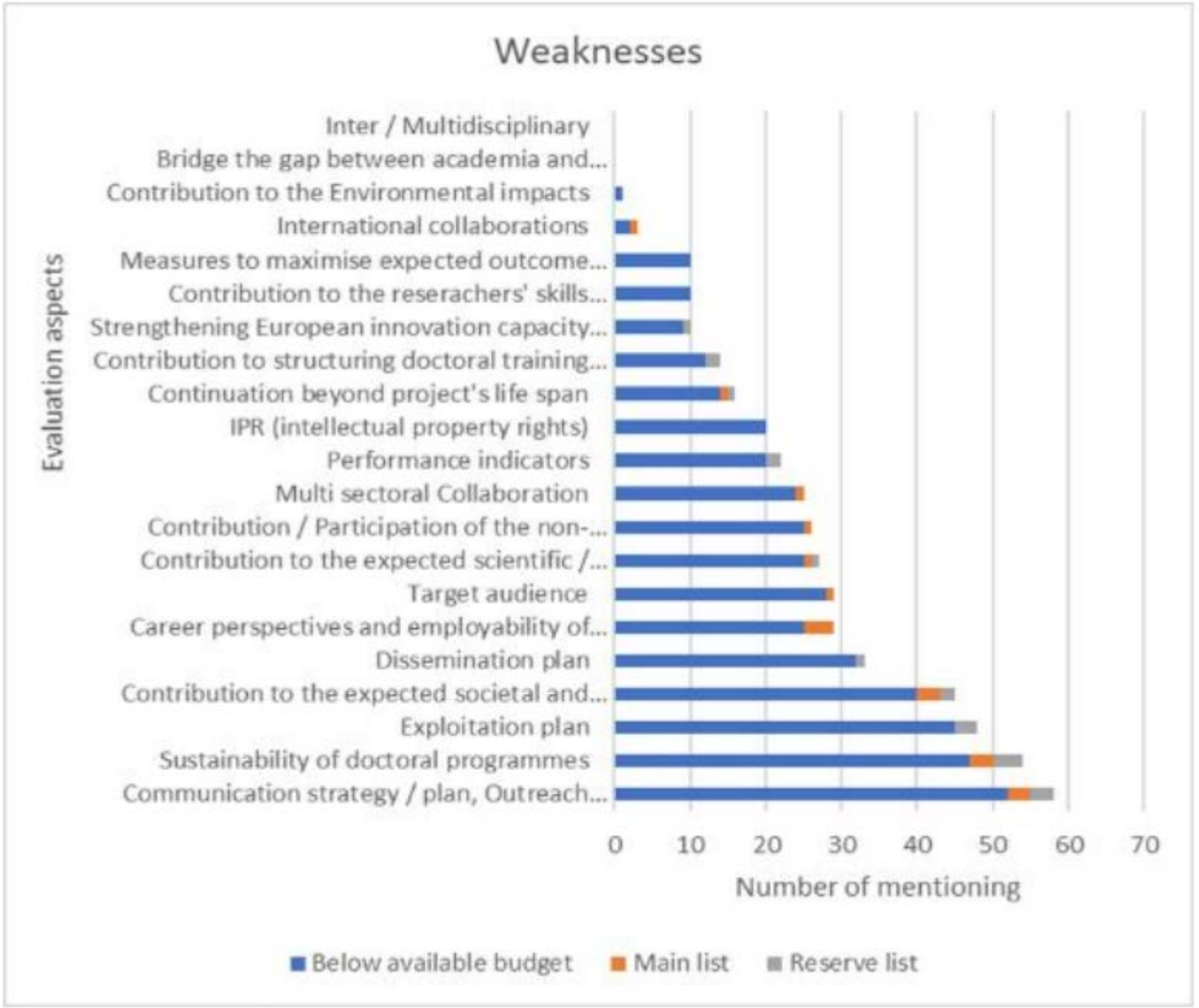
+ Economic impacts of the proposal are very efficiently described since the topic is essential for developing good practices among economic actors and in public institutions, **reducing and rationalising costs**, and **preventing damage** resulting from legal actions.

+ The proposal describes credible economical/technological impact, through creating high-quality new knowledge on supercapacitors, **increasing efficiency and decreasing costs for self-powered sensors**.

+ The potential economic/technological impact is high, since the programme will credibly **improve efficiency and lay the foundation for a number of new products.**

+ The development of new efficient tracers for radiochemistry not only fosters European economic growth within the research and development sector but also **opens avenues for commercialization and industry partnerships.**

FIG 20: MSCA DN 2022 IMPACT WEAKNESSES BY THE PROJECT STATUS



Source: 'In the framework of the MSCA-NET network we have analysed the ESRs and herewith the outcomes are presented.'

3. IMPLEMENTATION

MSCA-NET

3.1 Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages

3.2 Quality, capacity and role of each participant, including hosting arrangements and extent to which the consortium as a whole brings together the necessary expertise

3. Elements of IMPLEMENTATION criteria

Work plan

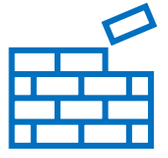
Deliverables & Milestones

Recruitment strategy

Progress monitoring

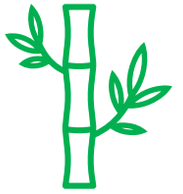
Risks

Consortium



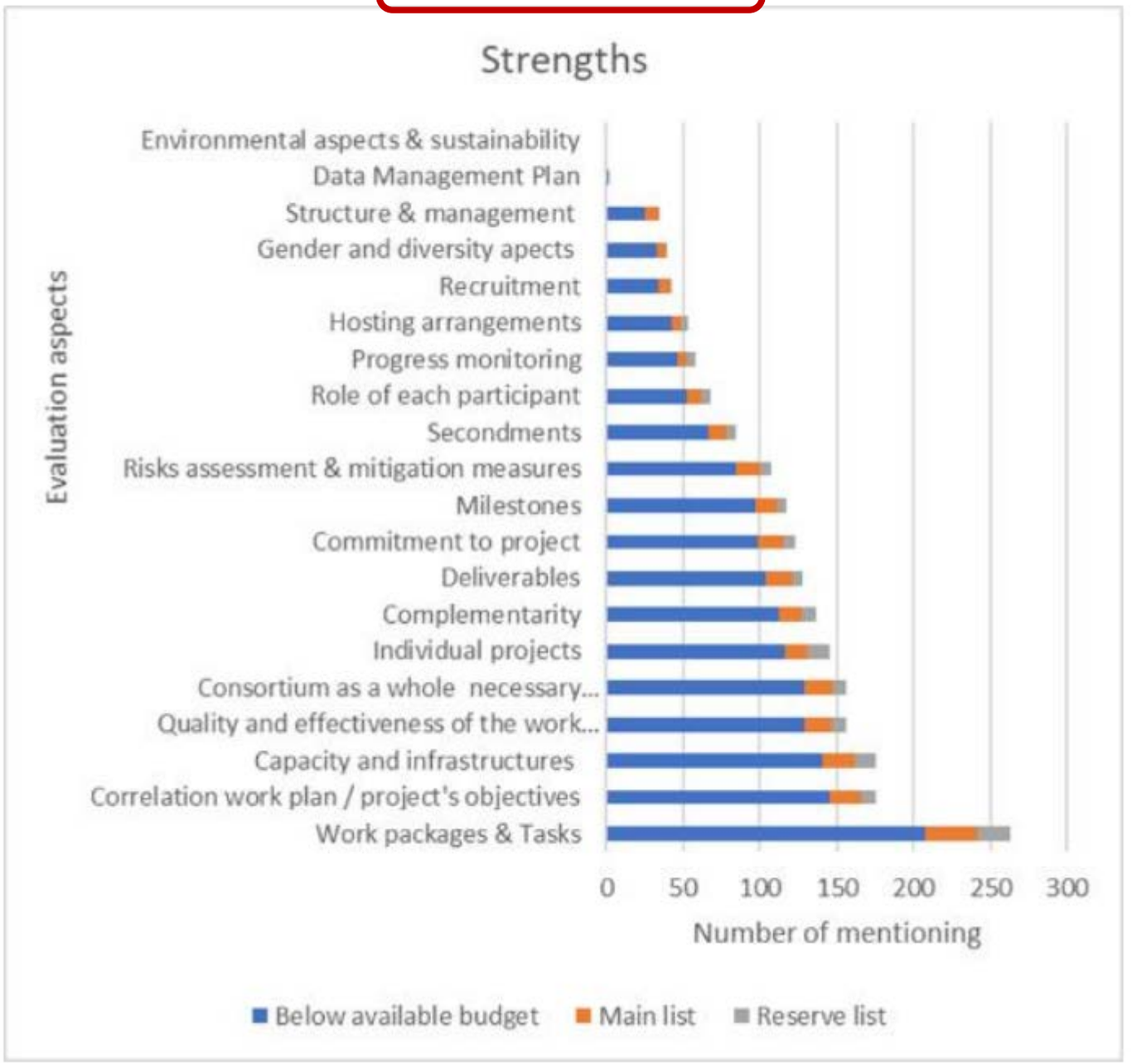
Complementarity

Hosting arrangments



Environment

FIG 27: MSCA DN 2022 IMPLEMENTATION STRENGHT BY THE PROJECT STATUS



Source: 'In the framework of the MSCA-NET network we have analysed the ESRs and herewith the outcomes are presented.'

3.1 QUALITY AND EFFECTIVENESS OF THE WORK PLAN, ASSESSMENT OF RISKS AND APPROPRIATENESS OF THE EFFORT ASSIGNED TO WORK PACKAGES

MSCA-NET

- ✓ Work Packages list and description (tables)
- ✓ Deliverables (table) and milestones (table)
- ✓ Recruitment table per beneficiary
- ✓ Fellow's individual projects (table) including secondment plan, plus progress monitoring
- ✓ Implementation risks (table)
- ✓ For DN-JD, joint admission, selection, supervision, monitoring and assessment procedures (if not applicable, please remove)

Due date: The schedule should indicate the number of months elapsed from the start of the action (Month 1)

Definition: A work package is defined as a major subdivision of the proposed action

Table 3.1 a: Work Package[7] (WP) List

WP No.		
	WP Number	
	WP Title	*(e.g. including Research, Training, Management, Communication and Dissemination…)*
	Objectives	
	Description of Work and Role of Specific Beneficiaries / Associated partners *(possibly broken down into tasks), indicating lead participant and role of other participating organisations. For each task, quantify the amount of work. Provide enough detail to justify the resources requested and clarify why the work is needed and who will do it.* *Deliverables linked to each WP are listed in Table 3.1c (no need to repeat the information here).*	

- Describe the overall structure of your work plan, then each Work Package.
- Demonstrate logical links between the Work Packages.
- It is usual practice to include 3 or 4 Research WPs (matching the description in Section 1.2). Also include non-research Work Packages:
  - Management WP
  - Training WP
  - Dissemination/ Exploitation/ Communication/ Public Engagement WP
- Each Work Package must be described in detail: title, objectives, tasks, calendar, contributors.

The work plan for the programme research and training objectives must be coherent and efficient. It must convince the evaluators that you are **able to achieve the objectives set**

EXAMPLE – Work package

MSCA-NET

Table 3.1 a Work Package Descriptions

Work Package Number	1	6-42
Work Package Title	Biomarker Discovery (research/training)	
Lead Beneficiary	UVEG (Jose Bagan)	
Objectives (A) To train ESRs in state of the art techniques related to biomarker discovery, (B) To identify novel panels of biomarkers for OOC, (C) To pursue an avenue of translational research utilising identified biomarkers as therapeutic targets, (D) To identify potential molecules for IP protection and patenting		
Description of Work and Role of Beneficiaries/Partners **Task 1.1. (Lead:** UVEG; **Participants:** TCD, NIBRT; **ESR 1). Identify differences in salivary glycan profiles in different disease stages of OSCC.** TCD will provide expertise in inflammatory markers analysis using flow cytometry and other immune assays. NIBRT will provide expertise in glycan analysis, ranging from isolation of salivary protein glycans through to glycan structural identification using liquid chromatography and mass spectrometry technologies. **Task 1.2. (Lead:** QUB; **Participants:** Almac Diagnostics and TCD; **ESR 2). Develop integromic biomarkers capable of predicting response to chemotherapy in early stage OAC.** QUB together with Almac will analyse whole genome sequencing, methylation and microarray data aiding in biomarker discovery. TCD will functionally analyse the underlying biology of predictive classifiers. **Task 1.3. (Lead:** UVEG; **Participants:** IME-SP; **ESR 3). Develop a diagnostic test based on salivary inflammatory markers as a predictor of an OSCC patient's response to radiotherapy.** IME-SP will utilise the Mesoscale discovery platform to determine the inflammatory cytokine profile of patient samples.		
Deliverables 1.1 Report on correlation of salivary inflammatory & glycan markers with stages of OSCC (M24) 1.2 Report on correlation of salivary marker level with tumour control in radiotherapy patients (M24) 1.3 Report on identification of molecular signatures predictive of response to chemotherapy (M24) 1.4 Report on retrospective validation of resultant predictive classifiers (M36) 1.5 Awarding of PhD degree to ESRs 1-3 (M48)		

WORK PLAN

+ The work plan is well **articulated**, with reasonable **time allocated** to scientific tasks, and it is aligned with the research and training **objectives**.

+ Overall, the work plan is **coherent** with the proposal's **objectives** and the proposed **methodology**. The work packages are appropriately structured. **The individual research projects** and their secondment plans are sufficiently integrated within the work plan.

+ The proposal includes detailed **descriptions** of work packages (WPs), their objectives, leaders, beneficiaries, and **associated tasks**. The WPs are organised logically and **integrated effectively**, with clear **connections** between them.

+ Links between all project components (WPs, deliverables, results, timeframe, responsible partner) are clearly defined and appropriate for the proposed WPs and the **time allocated**.

+ **The individual research projects** within each WP are adequately outlined, specifying the objectives, expected results, and planned secondments.

WORK PLAN

- The **synergies** and **complementarities** between the work packages **are insufficiently differentiated** which will affect the implementation of the work plan.
- **Integration and inter-dependencies** among different work packages to ensure cohesive project development are inadequately demonstrated. One example is the timely and effective management of data that would be impacted by the late initiation of the data management plan.
- **The individual research projects** are not sufficiently **well integrated into the work plan**; for example, the proposal lacks a credible justification for the **overlap and duplication** of effort across some of the planned activities.
- The work-packages are overall not sufficiently **detailed**.

EFFORT/TIMELINE

- The proposal lacks a sufficiently **detailed timeline** for implementation of dissemination and exploitation activities.
- The effectiveness of some **secondments** that have **a short duration** is not sufficiently justified.
- The timing of releasing research **deliverables** related to doctoral candidates' projects does not allow the development of the action to be verified.

DELIVERABLES

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Deliverable: a distinct output of the action (e.g. report, document, technical diagram, software, etc.)

numbering convention: <WP number>.<number of deliverable within that WP>

Examples

D1.2: Consortium Agreement (here 2nd deliverable of WP 1)

D2.3: Report on Project Publications

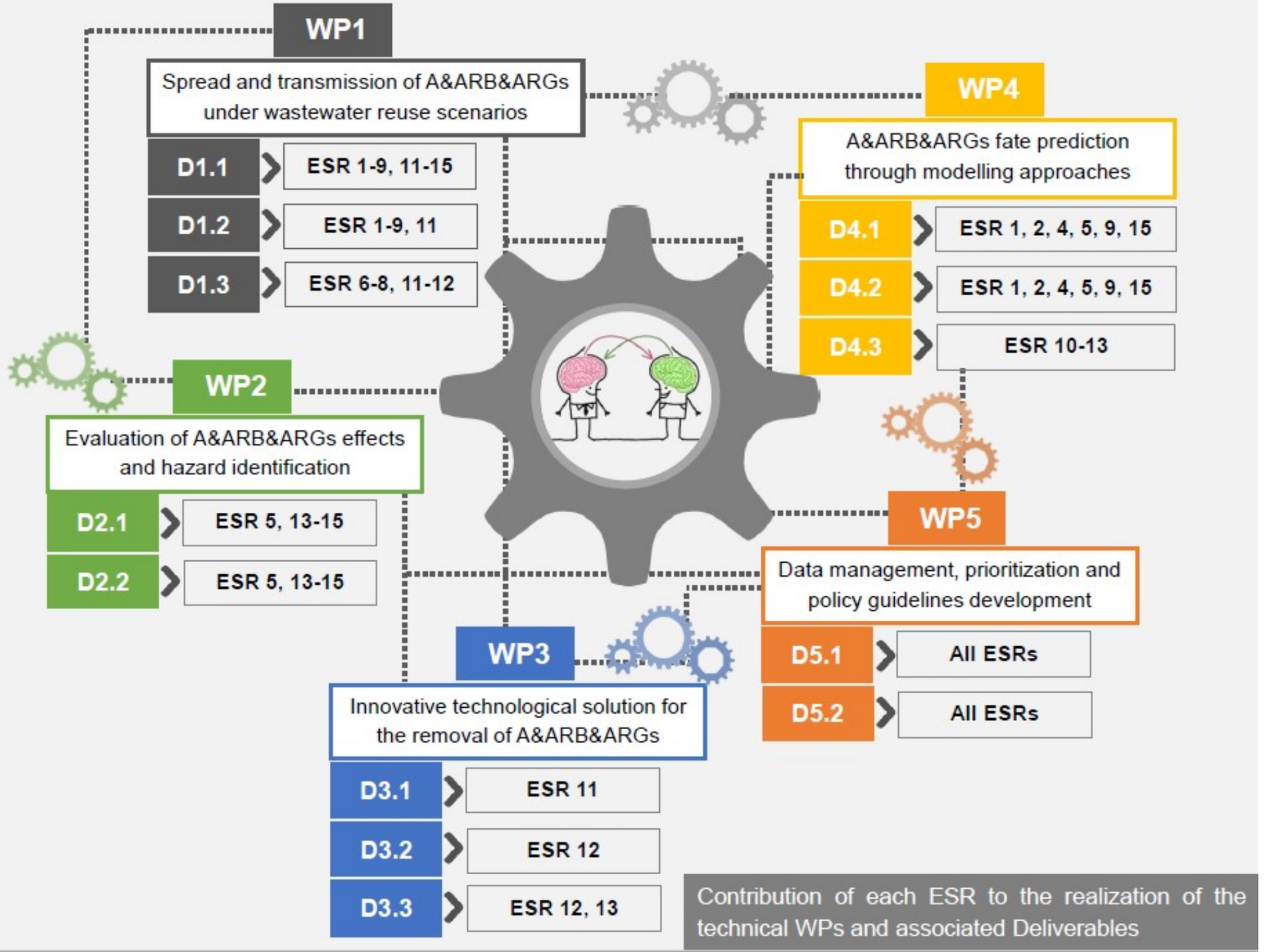
D4.1: Report on Summer School 1

Scientific Deliverables						
Deliverable Number[10]	Deliverable Title	WP No.	Lead Beneficiary Short Name	Type[11]	Dissemination Level[12]	Due Date
Management, Training, Recruitment[13] and Dissemination Deliverables						
Deliverable Number	Deliverable Title	WP No.	Lead Beneficiary Short Name	Type	Dissemination Level	Due Date

***Type: R** = Report; **ADM** = Administrative (website completion, recruitment completion, etc.);*
***PDE** = dissemination/exploitation; **OTHER** = Other including coordination*

Dissemination level: PU = Public, CO = Confidential, CI = Classified

***Recruitment Deliverables:** Including overall recruitment (e.g. advertising vacancies), Researcher Declarations on Conformity, Career development Plan, etc.*



Contribution of each ESR to the realization of the technical WPs and associated Deliverables

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Source: ANSWER ITN project

EXAMPLE – Deliverables list

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List of major deliverables including the awarding of doctoral degrees

Table 3.1 b Deliverables List

Number	Delivery Title	Work Package #	Lead Beneficiary	Type	Dissemination Level	Delivery Month
D6.1	Web site and social media interfaces available	WP6	CERN	ADM	PU	6
D5.1	Initial training event completed and evaluated in order to allow for future RADSAGA generalized training	WP5	KUL	OTHER	PU	12
D5.2	"Personal Training Plans" (PPPs) and updated "Personal Project Plans" (PPPs) agreed and on internal webserver	WP5	KUL	ADM	PU	14
D6.2	Feedback collected from public lecture and discussion tables and included in remaining outreach planning	WP6	CERN	OTHER	PU	16
D5.3	RADECS short-course developed, delivered and evaluated	WP5	KUL	OTHER	PU	24
D7.2	Mid-term review, risk assessment update and status report available	WP7	CERN	ADM	PU	24
D7.3	Technical status review of all ESR projects is provided	WP7	CERN	OTHER	PU	24
D4.1	Evaluation report of 14MeV test methodology	WP4	CERN	R	PU	28
D1.1	Compendium status report on European irradiation facilities	WP1	JYU	R	PU	30
D2.1	Status report on coupled effects and predictions tools	WP2	UM2	R	PU	30
D6.3	RADSAGA support material and presentations made available for High-School teacher training	WP6	CERN	PDE	PU	30
D1.2	Technical summary report on facility dosimetry procedures	WP1	JYU	R	PU	32
D2.2	Status report on coupled effects and predictions tools	WP2	UM2	R	PU	32
D1.3	Design status report and prototype of SRAM radiation monitor	WP1	JYU	R	PU	34
D2.3	Design status report of radiation tolerant CMOS imager	WP2	UM2	R	PU	34
D1.4	Documentation of test setups practical for mixed-facilities	WP1	JYU	R	PU	36

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The following deliverables will have to be submitted for grants awarded under this topic:

- **establishment of a supervisory board** of the network;
- **progress report** submitted within 30 days after one year from the starting date of the action;
- **mid-term meeting** organised between the participants and the granting authority;
- **mobility declaration** submitted within 20 days after the recruitment of each researcher and updated (if needed) via the Funding & Tenders Portal Continuous Reporting tool;

- **career development plan**: a document describing how the individual Career Development Plans have been established (listing also the researchers for whom such plans have been put in place), submitted before the mid-term meeting;
- **evaluation questionnaire** completed by each recruited researcher and submitted at the end of the research training activity; a follow-up questionnaire submitted two years later;
- **data management plan** submitted at mid-term and an update towards the end of the project if needed;
- **plan for the dissemination and exploitation of results**, including communication activities, submitted at mid-term and an update towards the end of the project.

MILESTONES

MSCA-NET

Milestone: control point in the action that help to chart progress, e.g. completion of a key deliverable, intermediary points where corrective measures can be taken, a critical decision point for further development etc.

For DN-JD projects, specific milestones may also be added (Agreement to deliver the joint/ double/ multiple PhD).

Examples

M 1.1: Test phase concluded

M 2.3: Map completed & published

Mandatory (added during GA preparation):

- Mid-Term meeting between REA and the consortium
- Recruitment process completed

Number	Title	Related Work Package(s)	Lead Beneficiary	Due Date [19]	Means of Verification[20]
MS<Number>	Specific but concise	One milestone can relate to one or several WP	Use organisation short names from Participants Table	(in months elapsed from the start of the project) e.g., M6, M12	Be concrete (use clear indicators)

Means of Verification: Show how the consortium will confirm that the milestone has been attained. Refer to indicators if appropriate.
For example: a laboratory prototype completed and running flawlessly; software released and validated by a user group; field survey complete and data quality validated.

DELIVERABLES & MILESTONES

+The proposal presents precisely specified **scientific, management, training, recruitment, and dissemination deliverables**, which are **coherent** with the **work package content**, and well **defined progress monitoring** and evaluation of **individual research projects**.

+ **Scientific** and **administrative** deliverables and milestones are correctly defined, matched with the **planned activities** and **verifiable**. The **milestones** logically align with the proposal's **timeframe** to allow for efficient **progress control**.

+ The deliverables and milestones are very well defined, with precise information about **expected results** within the defined timelines, and control points for **successful delivery of goals** of the proposal.

DELIVERABLES & MILESTONES

- The deliverables outlined in the proposal are **insufficiently developed**, lacking detailed tasks that would effectively **document how progress** can be achieved to fulfill the research aims.
- The **timeline** of milestones is not fully credible.

Table 3.1 f: Individual Research Projects

Fellow *(e.g. researcher1)*	Host institution	PhD enrolment*	Start date *(e.g. Month 6)*	Duration *(e.g. 36 months)*	Deliverables *(refer to numbers in table 3.1b)*
Project Title and Work Package(s) to which it is related:					
Objectives:					
Expected Results:					
Planned secondment(s): *Host, supervisor, timing, length and purpose*					
*** Enrolment in Doctoral degree(s):** **DN-JD specific:** institutions where the researcher will be enrolled to obtain a joint/double or multiple doctoral degree should be included **DN and DN-ID:** institution where the researcher will be enrolled to obtain a doctoral degree should be included					

If possible & meaningful, in the other sector

If applicable and relevant, linkages between the individual research projects and the work packages should be summarised here (one table per fellow)

Table 3.1 e: Recruitment Table per Beneficiary

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Researcher No.	Recruiting Participant (short name)	PhD awarding entities	Planned Start Month 0-45	Duration (months) 3-36
1.	Use organisation short names from Participants Table	Use organisation short names from Participants Table Can be different from the Recruiting Participant	(in months elapsed from the start of the project) e.g., M3, M6	Minimum: 3 Maximum: 36
2.				
3.				
…				
Total				

If a Doctoral Candidate is recruited by more than one beneficiary, please indicate this in the table accordingly.

Have in mind that some countries/institutions have fixed recruitment dates for doctoral candidates, and this should be taken into account when planning the start dates.

WORK PROGRAMME MSCA

The selection procedure for doctoral candidates must be open, transparent and merit-based, in line with the Code of Conduct for the Recruitment of Researchers. The vacancy notice (to be widely advertised internationally, including on the EURAXESS[17] website) must mention if the published rates include all employer and employee's taxes and contributions. If possible, the gross salary (net salary + employee's taxes and contributions) should be published.

The European Charter for Researchers

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202301640

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Pilar 1 Ethics, Integrity, Gender and Open science	Pilar 2 Researchers' Assessment, Recruitment and Progression	Pilar 3 Working conditions and Practices	Pilar 4 Research Careers and Talent Development
• Ethics and research integrity • Freedom of scientific research • Open science • Gender equality • Embracing diversity • The researcher • Free circulation of researchers • Sustainability of research	• Researchers' assessment • Recruitment • Selection • Career Progression	• Working conditions, funding and salaries • Stability of employment • Contractual and legal obligations • Dissemination and exploitation of results	• Valuing diverse research careers • Carer development and advice • Continuous professional development • Supervision and mentoring

Transversal nature of Pilar 1 – these principles are mainstreamed and taken into consideration in the implementation of the rest of the principles and commitment towards excellence in research!

Holistic perspective and core of MSCA – connected through different dimensions of the research and project proposals!

Source: Sandra Vidović, NCP HR, Zagreb, 2023

B2 document

4. Recruitment strategy

Centralised recruitment is best.

Describe the application process, applicant requirements, composition of selection committees, decision making/selection process.

Use EURAXESS Jobs and funding portal to advertise.

Explain employment conditions (employment contracts with full social security benefits are mandatory unless prevented by national legislation).

The following sections of the European Code of Conduct for the recruitment of the researchers refer specifically to recruitment and selection:

Recruitment

Employers and/or funders should establish recruitment procedures which are open, efficient, transparent, supportive and internationally comparable, as well as tailored to the type of positions advertised.

Advertisements should give a broad description of knowledge and competencies required, and should not be so specialised as to discourage suitable applicants. Employers should include a description of the working conditions and entitlements, including career development prospects. Moreover, the time allowed between the advertisement of the vacancy or the call for applications and the deadline for reply should be realistic.

Selection

Selection committees should bring together diverse expertise and competences and should have an adequate gender balance and, where appropriate and feasible, include members from different sectors (academic and non-academic, and disciplines, including from other countries and with relevant experience to assess the candidate. Whenever possible, a wide range of selection practices should be used, such as external expert assessment and face-to-face interviews. Members of selection panels should be adequately trained.

Have in mind gender-balanced recruitment. If applicable and relevant to your research area, describe how you will recruit a gender-balanced mix of doctoral candidates, e.g. targeted advertising to women-in-science groups (e.g. IEEE Women in Engineering, plus multi-disciplinary groups such as the European Platform of Women Scientists).

Our Recruitment Strategy

Recruitment guidelines were prepared by the **project coordinator** and distributed among the **beneficiaries**

Establishment of three-member Selection/Evaluation Committees for each ESR position (partners from **academic** and **non-academic sector**)

Advertisements of the open positions were prepared and distributed **well in advance**

Skype interviews and **face-to-face interviews** were used during the selection process (in various cases University committees were formed for the selection)

Source: ANSWER ITN project

RECRUITMENT STRATEGY

+ The recruitment strategy is **well organised**. The proposal has in place **very appropriate joint** admission, selection, monitoring and assessment procedures.

+ The recruitment process is **credible** and **inclusive**. It is coherent with the proposal's **objectives**

+ The recruitment strategy **aligns with** the ***European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.***

PROGRESS MONITORING AND EVALUATION OF INDIVIDUAL RESEARCH PROJECTS

MSCA-NET

- Address the issue of overall quality assurance – will there be external review/monitoring of the Doctoral Network by an independent panel/external advisory group?
- A good practice is to develop a progress monitoring procedure ensuring effectiveness of the progress monitoring (e.g., timely delivery of project deliverables and milestones).
- Another good practice is to have an evaluation and satisfactory survey completed by the doctoral candidates at the end of each training session.
- Individual Projects: Link back to 1.4 Supervision, particularly on monitoring and updating Personal Career Development Plans. Focus on timings and structures here (day to day supervision and communication with the doctoral candidate, meetings of PhD theses committee, evaluation of the doctoral candidate's progress for the internal reports, etc.)

THE PROGRESS MONITORING

+ The progress monitoring framework is **robust**.

+ The **measures** for the progress monitoring of the individual research projects are very credible.

+ The progress monitoring of individual research projects is **convincingly described**.

THE SUPERVISION ARRANGEMENT

+ The supervision arrangement for the candidates is not sufficiently described and does not ensure **regular meetings** for exchange of knowledge and progress monitoring between DCs and supervisors.

- **Risk management at consortium level**
  - Include a list incorporating research risks and project management risks. Describe practical mitigation and contingency plans for both.

Description of risk (indicate level of (i) likelihood, and (ii) severity: Low/Medium/High)	Work package(s) involved	Proposed risk-mitigation measures

A critical risk is a plausible event or issue that could have a high adverse impact on the ability of the project to achieve its objectives.
Level of likelihood to occur: Low/ medium/ high
The likelihood is the estimated probability that the risk will materialise even after taking account of the mitigating measures put in place.
Level of severity: Low/medium/high The relative seriousness of the risk and the significance of its effect.

RISKS

+ The risks are properly identified, and the proposed **mitigation measures** are well addressed.

+ The **management and scientific risks** are adequately identified, and its contingency plans are sufficiently anticipated.

+ The **technical** and managerial risks of the action are well identified.

RISKS

- Although the individual research projects are well considered there are **some concerns over interdependence**; some doctoral candidates are dependent on the animal models to be developed by other doctoral candidates raising **concerns about the implementation** of their work.
- The mitigation measures for risks associated with **the availability for use of the experimental facilities**, as well as for **the risk of timely access** to high performance computing resources, are not sufficiently elaborated. This is a shortcoming.

EXAMPLE – Implementation risks

MSCA-NET

N.	Description of Risk	WP	Proposed mitigation measures
1	One participant is not able to full fill the plan of recruitment.	8	The remaining person months will be transferred to some other participants according to work plan needs.
2	One recruited researcher is not integrated in the hosting institution	8	The Training Committee will interact between the researcher and his/her supervisor. If solution is not found the Supervisory Board will offer the researcher the transfer to another host institution from the Network.
3	A partner may leave the consortium due to internal or external factors	8	The Supervisory Board will try to redistribute the pending research and training activities, and funding, between other Network members, and will offer the possibility to the hosted ESR to transfer to another member.
4	A milestone cannot be achieved	8	The Lead Beneficiary and the WP leader concerned have to decide about a prolongation of the task/activity time, as well as, proposing an adequate alternative milestone to the Supervisory Board.
5	Some conflicts appear along the Network, including IPR conflicts.	8	The Coordinator will intermediate between the parties. Should agreement not be reached, the conflict will be resolved by the Supervisory Board, in line with the recommendations of the EC and the Consortium Agreement.
6	Molecular recognition at high speed is not possible	2	Preliminary tests show the feasibility of this integration. Use of two pass-methods with different setting parameters will be essayed.
7	Sub-10 nm spatial resolution in dielectric composition mapping cannot be achieved	2	Preliminary calculations show the possibility to reach this spatial resolution. Use of insulated shielded probes to focus the dielectric signal can provide additional increase in spatial resolution.
8	Chemical modification of probes changes high speed performance.	3	Consortium experts in high speed AFM and probe fabrication develop jointly this task and will introduce other probe chemical functionalisations.
9	Sub-10 nm resolution in 3D doping density profiling cannot be reached.	4	Integration of the latest SMM technology and leading electronic device fabrication. Target shallow 3D tomographic doping reconstruction.
10	3D monitoring of nanoparticle cell uptake in living cells not possible.	5	3D detection in non-living cells have already been partially achieved and demonstrated. Use of partial cell fixation procedures.
11	Metrology development of validation techniques not possible.	6	Consortium experts with exceptional track records in quantitative measurement NPL offer training in uncertainty budget development.

+ The work plan is logically and coherently structured to ensure a very good balance between research and training. The goals for the project of each doctoral candidate are explained in appropriate detail. The allocation of tasks is adequate.
+ The risk analysis is comprehensively addressed, and the corresponding mitigation measures are convincing.
+ Work plan is very well elaborated to include an articulated set of reliable, comprehensive and convincing WPs. Tasks and resources are very well allocated and fit the objectives.

- Time of release of scientific deliverables is not balanced throughout as almost all are expected 2 years after the starting date.
- Despite the identification of experimental risks, appropriate mitigation measures are insufficiently presented.
- The timeline of research activities is not convincingly presented, as it is not fully consistent with a smooth workflow.

3.2 QUALITY, CAPACITY AND ROLE OF EACH PARTICIPANT, INCLUDING HOSTING ARRANGEMENTS AND EXTENT TO WHICH THE CONSORTIUM AS A WHOLE BRINGS TOGETHER THE NECESSARY EXPERTISE

MSCA-NET

- Appropriateness of the infrastructure and capacity of each participating organisation, as outlined in Section 4 (Participating Organisations), in light of the tasks allocated to them in the action
  - Describe how the consortium has the necessary state-of-the-art infrastructure (databases, laboratories, research and scientific equipment, software, etc.), and premises to host and implement all aspects of the programme (research, training, administration, communications, exploitation, etc.).
  - Describe the overall operational capacity and staff resources are sufficient to host and train researchers.
  - Point out that consortium participants are leaders in their field and have all the research infrastructure, expertise and appropriate capacity for training programmes.
  - Make sure that the hosting arrangements of the doctoral candidates are consistent across the consortium.

! EURAXESS service centres!

- Consortium composition and exploitation of participating organisations' complementarities: explain the compatibility and coherence between the tasks attributed to each beneficiary/associated partner in the action, including in light of their experience
  - Show how this includes expertise in social sciences and humanities, open science practices, and gender aspects of R&I, as appropriate
  - Explain how the consortium and supervisors are the best choice to implement this programme including:
  - Complementarities/synergies between all participants and how these will be exploited to deliver an excellent programme (use a diagram or table).
  - How their previous experience makes them suitable for their tasks in this programme.
  - Also, state if you have had previous direct experience with cooperation in research projects (e.g., MSCA ITN, MSCA RISE, COST Action or another research project).

EXAMPLE – Complementarities of participating organisations

MSCA-NET

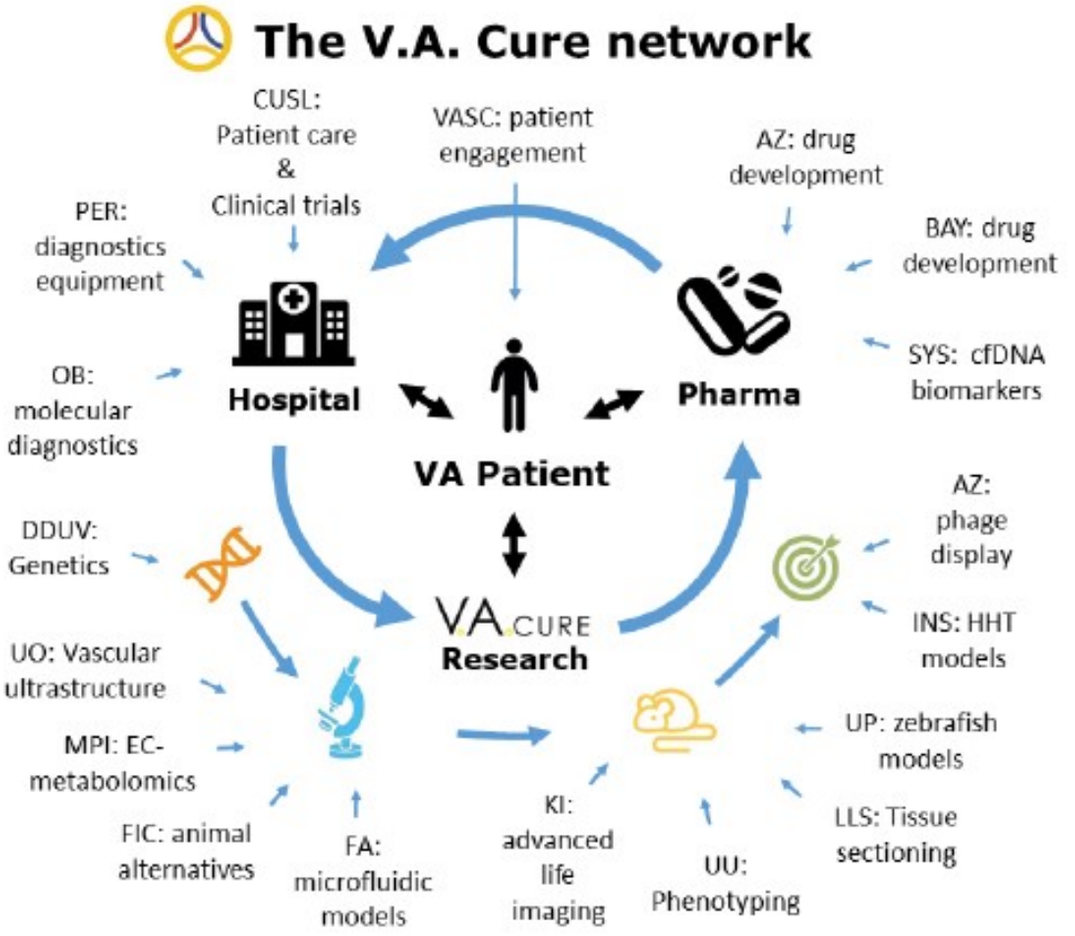
de Duve INSTITUTE

UCLouvain

V.A. Cure Network:

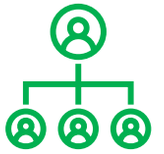
complementary contributions of all partners to the network.

8 universities, 7 companies, a hospital and a patient organisation



Connection to networks to show that the research is not isolated and will bring benefits to many people.

CONSORTIUM



+ **The roles of the consortium members** are well specified, and their commitment to the proposed action is evident.

+ The partnership is **fully involved** and **committed** to the programme activities.

+ The consortium, as a whole, bring **appropriate competences** for carrying out the proposed research. The **partners´ commitment** to the programme is convincingly evidenced and relevant.

+ The quality of all network participants and their **hosting arrangements** is high, and the DCs will benefit from the **integration** in the teams/institutions.

+ The roles of all **associate partners** and their active contribution to research and training activities are clear and in line with their knowledge and experience.

+ The **infrastructure**, **operational capacity** and **facilities** of all participating organizations is highly adequate for the planned activities of the DCs and the overall research.

TASKS

+ The tasks attributed **to each beneficiary** and **associated partner** are **compatible** and **coherent** with their **experience**, and the proposal well describes how it exploits the **complementarity** of the different participants.

- The tasks are compatible and coherent **with the organizations** to which they are attributed. The **complementarity** between participating organisations is exploited.

CONSORTIUM

+ The consortium members **have prior experience** collaborating in various R&D projects, international programs, and EU-funded initiatives, and partnerships within medical infrastructure ground the research in real-world healthcare, demonstrating their capacity for successful project management, dissemination, and exploitation of outcomes.

CONSORTIUM

- The consortium as a whole **is not bringing together all the necessary expertise**. In particular, the IT industrial partner has not provided sufficient evidence on its expertise in the field of preclinical and clinical data/IT tools.
- The proposal describes in too generic terms **how the programme will exploit the participating organizations' roles**.

- **Joint governing structure (including a steering board, mandatory for DN-ID and DN-JD actions)**
  - Explain decision making processes (e.g. majority rules) and conflict resolution strategy.
  - Describe the structures that will be put in place to oversee the doctoral programme and ensure quality control, making sure that the various administrative units across the participants with responsibility for doctoral programmes are working in a coherent and coordinated manner.
  - The Doctoral Studies Committee in the management structure could include a representative from the Graduate Studies Office or equivalent.
  - One issue to specifically address is that of mutual recognition – it is important that research training done at participant A is recognised by participant B for the purposes of earning a doctoral degree.

- Commitment of associated partners to the programme (please see also section 8). The role of associated partners and their active contribution to the research and training activities should be described.

- Outline the commitment of each participant by showing that they are all highly active in the project – refer to earlier sections.
- It is vital to highlight strong non-academic sector involvement.

- Funding of non-associated third countries (if applicable)

- Only entities from EU Member States, from Horizon Europe Associated Countries or from countries listed in the HE Programme guide are automatically eligible for EU funding.

- If one or more of the beneficiaries requesting EU funding is based in a country that is not automatically eligible for such funding, the application shall explain in terms of the objectives of the action why such funding would be essential. Only in exceptional cases will these organisations receive EU funding. The same applies for international organisations other than IERO.

B2 document

5. Network organisation

MSCA-NET

- Please explain the management structure and organisation of the network, including the roles of the different actors, and modus operandi including project monitoring and decision making. Please describe the Joint Governing structure for DN-ID and DN-JD.
  - Suggested Management Structure: Supervisory board (main body), External Advisory group, Project management team, Doctoral candidate committee, committees related to work packages: training/ doctoral studies committee, Communication and Public engagement committee, Research coordination committee, Dissemination, IP and exploitation committee.
  - Describe each Committee (composition and role). Gender balance is very important.
  - Explain decision-making processes (e.g., simple majority or 2/3 majority rules) and conflict resolution strategy.
  - Describe the use of the Consortium Agreement and what it will cover – a good example is available from the DESCA website (**https://www.desca-agreement.eu/desca-model-consortium-agreement/**)

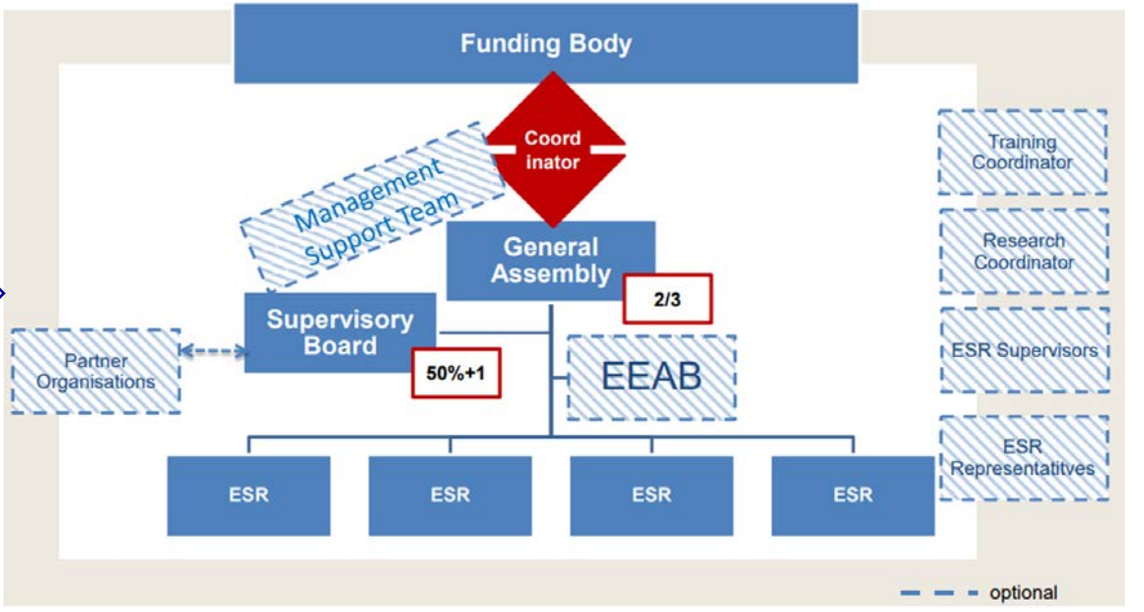
SUPERVISORY BOARD

A Supervisory Board is essential.

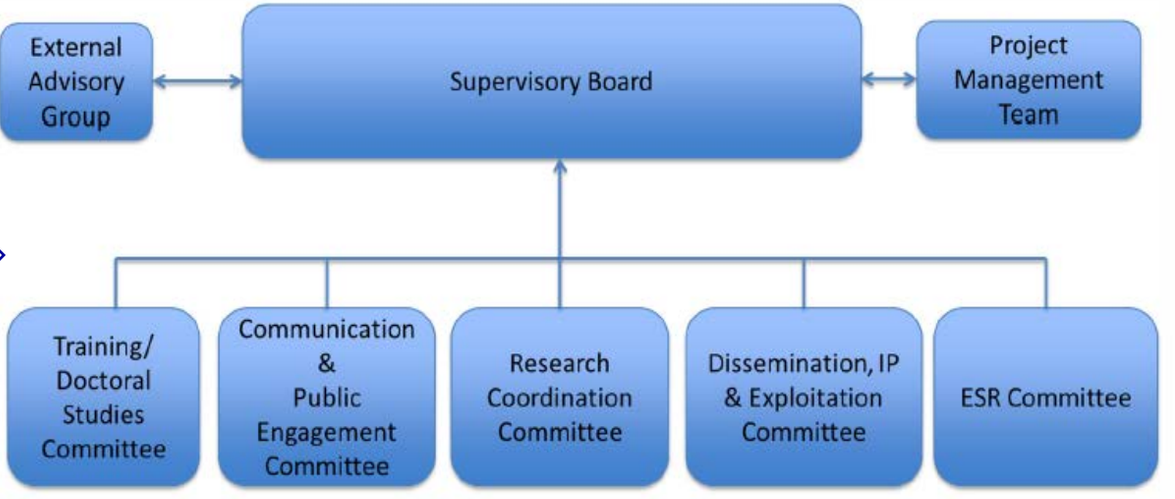
All beneficiaries and POs represented, plus at least one doctoral candidate representative (consider rotating representation among all doctoral candidates).

This is the main decision-making body

LERU Consortium Agreement Template: Governance structure



example



- Describe the financial management strategy – resource planning and allocation of finances. Ensure it is clear that the financial resources are allocated transparently and efficiently across the consortium so that the money is linked to the delivery of the programme.
- Where doctoral degrees in participating organisations require 4 years, if possible, state where you will find the additional funds for the additional year: evaluators are specifically instructed by REA to reward this proactivity with extra points, but not penalise proposals which don't.
- Describe the internal communications strategy to keep the consortium and the doctoral candidates in regular contact, e.g., intranet or other document repository, regular face-to-face and/or virtual meetings.

6. Supervisory board

- Please explain the composition and organisation of the Supervisory board, and how it will strive to adhere to the Marie Skłodowska-Curie actions guidelines on supervision.
- Please insert a table that displays the names and gender of supervisors for all Doctoral Candidates, to be adapted to your particular proposal;

  - A Supervisory Board is mandatory. This is the main decision-making body for the network. All beneficiaries and supervisors are represented, plus at least one doctoral candidate representative (consider rotating representation among all doctoral candidates).
  - Associated Partners can be represented in the SB with or without voting right.
  - Briefly describe the main activities of the Board, including regular meetings. Detailed decision-making procedures can be explained in Part B2 – section 4 – Network organisation.
  - Be conscious of having gender-balanced membership.

Doctoral candidate	Main Supervisor	Gender	Co-supervisor	Gender
DC1				
DC2				
DC3				

- **Gender aspects** (both at the level of recruitment and that of decision-making within the action)
- **Environmental aspects** in light of the MSCA Green Charter: https://marie-sklodowska-curie-actions.ec.europa.eu/about-msca/msca-green-charter

➢ The MSCA Green Charter is a code of good practice for individuals and institutions who are in receipt of MSCA funding.
➢ The goal of the MSCA Green Charter is to encourage sustainable thinking in research management.
➢ Describe sustainable measures of implementation and procedures on organisational and consortium level.
➢ Some measures individuals and institutions are invited to consider are:

- to reduce, reuse and recycle, promote green purchasing for project-related materials,
- ensure the sustainability of project events,
- use low-emission forms of transport,
- promote teleconferencing whenever possible,
- use sustainable and renewable forms of energy,
- develop awareness on environmental sustainability, etc.

➢ If you have included training for the Doctoral Candidates in ‘green aspects’, you may also include it here.

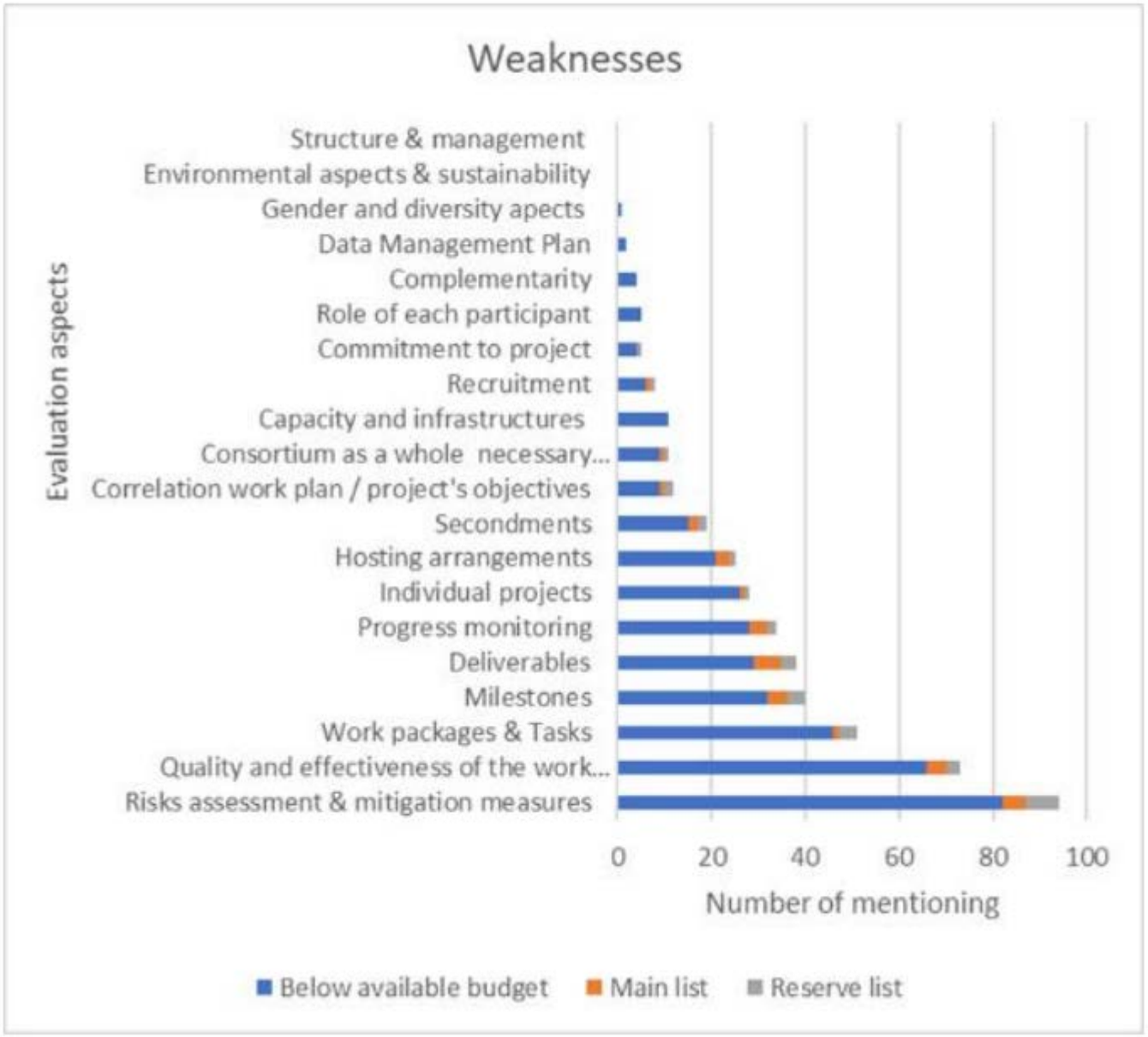
Beneficiary Legal Name:	
General Description Include HR Excellence in Research and/or Athena SWAN logo here if applicable	*Short description of the activities relevant to the action* ➢ Add a general description of the beneficiary and a short description of the actual centre/department/school participating in the action.
Role and Commitment of key persons (including supervisors)	*Including names, title and the intended extent of involvement in the action (in percentage of full-time employment) of the key scientific staff who will be involved in the research, training and supervision*
Key Research Facilities, Infrastructure and Equipment	*Outline the key facilities and infrastructure available and demonstrate that each team has sufficient capacity to host and/or offer a suitable environment for supervising the research and training of the recruited researchers.*
Status of Research Premises	*Please explain the status of the beneficiary's research facilities – i.e. are they owned by the beneficiary or rented by it? Are its research premises wholly independent from other beneficiaries and/or associated partners in the consortium?*
Previous Involvement in Research and Training Programmes, including H2020 ITN	*Detail any relevant EU, national or international research and training actions/projects in which the beneficiary has previously participated. Please clearly mention any previous involvement in H2020 ITN funded project(s), including project(s) acronym and reference number.*
Current Involvement in Research and Training Programmes, including H2020 ITN	*Detail any relevant EU, national or international research and training actions/projects in which the beneficiary is currently participating. Please clearly mention any current involvement in ongoing ITN funded project(s), including project(s) acronym and reference number.*
Relevant Publications/datasets/ softwares/ Innovation Products/ other achievements	*Max. 5* *Key elements of the achievement, including a short qualitative assessment of its impact and (where available) its digital object identifier (DOI) or other type of persistent identifier (PID).* *Publications, in particular journal articles, are expected to be open access. Datasets are expected to be FAIR and 'as open as possible, as closed as necessary'.*

Associated Partner Legal Name:	
General description	
Key Persons and Expertise	
Key Research Facilities, Infrastructure and Equipment	➢ Please be sure to list all facilities that will be needed by doctoral candidates on secondment at this organisation.
Previous and Current Involvement in Research and Training Programmes	➢ As for the beneficiaries, detail any relevant EU, national or international research and training projects in which the partner is currently participating. Internal research projects (not funded by external sources) can also be included here. Do not leave this blank – it will be penalised.
Relevant Publications/datasets/ softwares/ Innovation Products/ other achievements	*Max. 3* *Key elements of the achievement, including a short qualitative assessment of its impact and (where available) its digital object identifier (DOI) or other type of persistent identifier (PID).* *Publications, in particular journal articles, are expected to be open access. Datasets are expected to be FAIR and 'as open as possible, as closed as necessary'.*

+ The Joint Governing Structure is well depicted in the proposal. The Steering Board is well balanced and the Supervisory Board is adequately defined and suitable in terms of composition and duties.
+ Necessary infrastructure and capacity to host researchers is well demonstrated. The proposal presents clearly a set of well-organised hosting arrangements scattered in the different institutions that have the infrastructures and the operational capacity to carry out the programme.
+ Consortium has the necessary experience and knowledge to support DCs. Beneficiaries and associated partners are complementary in expertise and are well committed.

- Proposal lacks a sufficient description of hosting arrangements for the DCs.
- The governing structure of the network is neither sufficiently clear, nor well organised.
- The synergies at the consortium level and the cross-fertilisation among the existing expertise are not fully demonstrated.

FIG 28: MSCA DN 2022 IMPLEMENTATION WEAKNESSES BY THE PROJECT STATUS



Source: 'In the framework of the MSCA-NET network we have analysed the ESRs and herewith the outcomes are presented.'

REPUBLIC OF SLOVENIA
MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION

Thank you very much!

Take assistance from your MSCA NCP in providing credible **information**, document **interpretation** and **pre-screening** of your MSCA DN project proposal!

stojan.sorcan@gov.si

National Contact Points - MSCA-NET

Najnovejše informacije za javnost, NCP MSCA v Obzorju Evropa (ncpmscaslovenija.blogspot.com)

MSCA
Marie Skłodowska-Curie Actions
Developing talents, advancing research