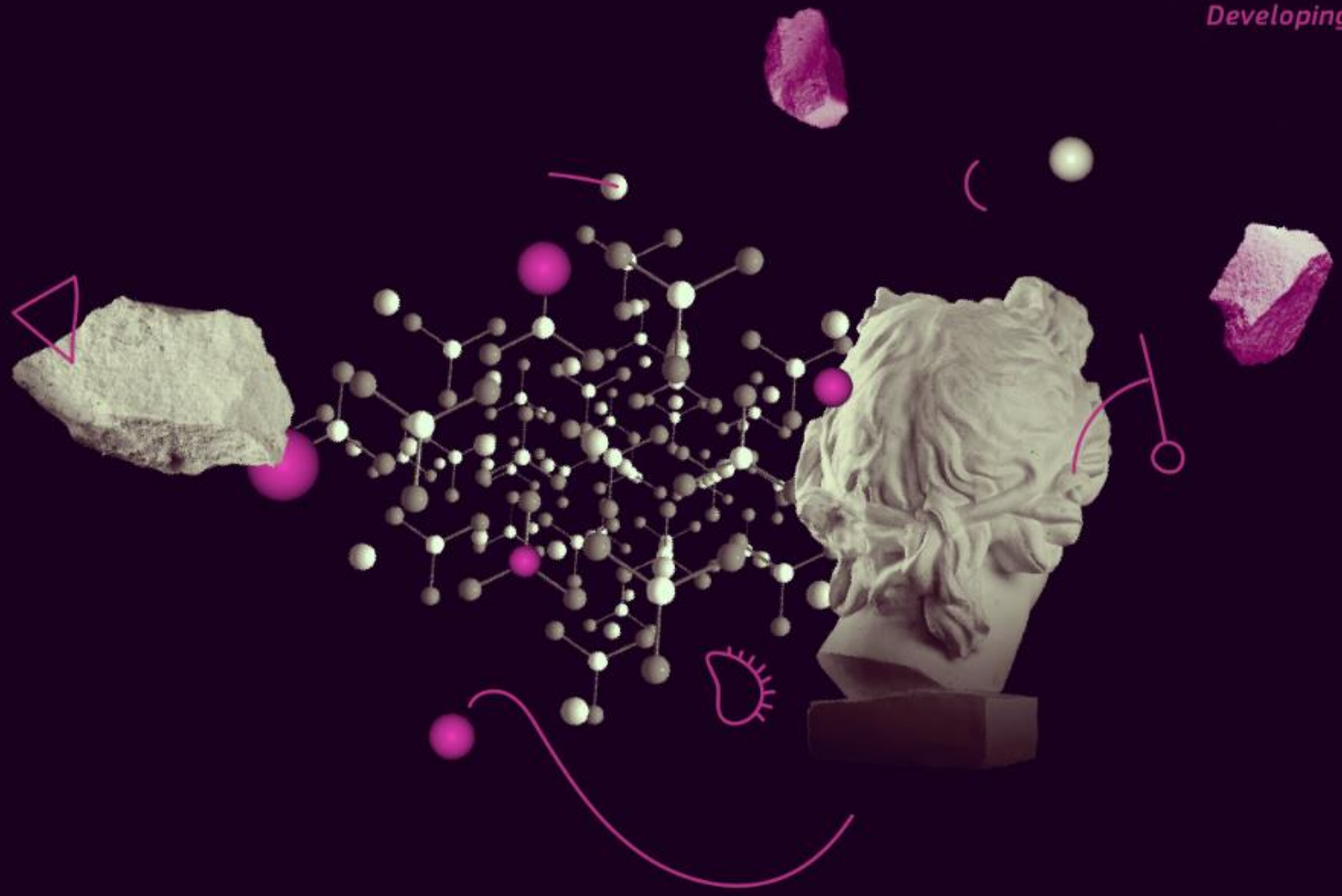
MSCA
Marie Skłodowska-Curie Actions
Developing talents, advancing research



Marie Skłodowska-Curie Actions Staff Exchanges 2023

15 grudnia 2023 r.
11:00-14:00

Marta Muter
dr Aleksandra Górecka

Evaluation criteria

(MSCA Work Porgramme 2023-2024, p. 100)

Excellence	Impact	Quality and efficiency of the implementation
Quality and pertinence of the project's research/innovation **objectives** (and the extent to which they are ambitious, and go **beyond the state of the art**)	Developing new and lasting research **collaborations**, achieving **transfer of knowledge** between participating organisations and contributing to improving research and innovation potential at the **European and global** level	Quality and effectiveness of the **work plan**, **assessment of risks**, and appropriateness of the **effort assigned** to work packages
Soundness of the proposed methodology (including **international, inter-sectoral and interdisciplinary** approaches, consideration of the **gender dimension** and other **diversity aspects** if relevant for the research project, and the quality of **open science** practices)	Credibility of the measures to **enhance the career perspectives** of staff members and contribution to their **skills development**	Quality, capacity and **role of each participant**, including hosting arrangements and extent to which the consortium as a whole brings together the necessary expertise
Quality of the proposed **interaction** between the participating organisations **in light of** the research and innovation **objectives**.	Suitability and quality of the measures to maximise **expected outcomes and impacts**, as set out in the dissemination and exploitation **plan**, including communication activities	
	The magnitude and importance of the project's contribution to the **expected scientific, societal and economic impacts**.	
50%	**30%**	**20%**

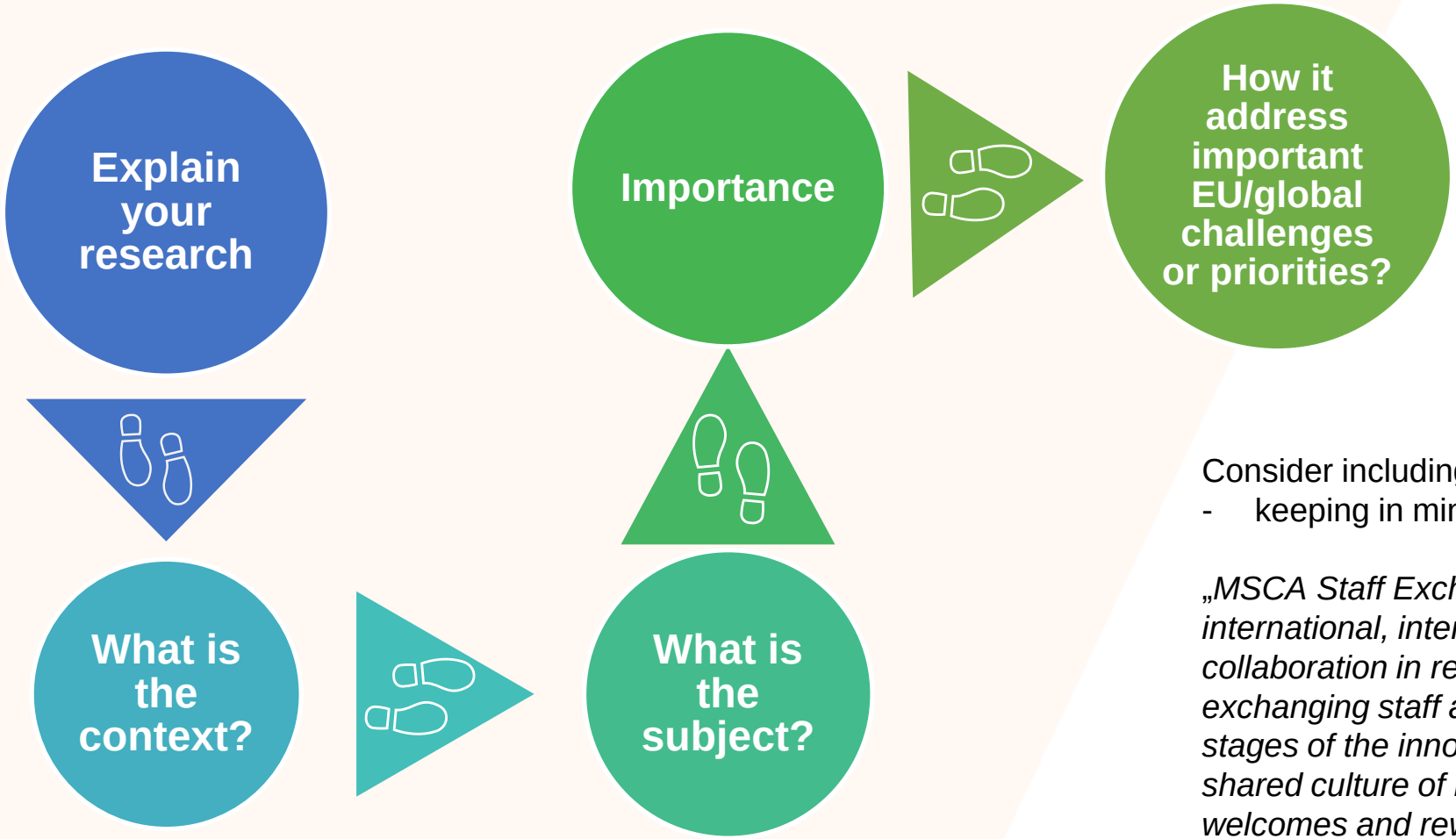
1.Excellence

1.1.	Quality and pertinence of the project's research/innovation **objectives** (and the extent to which they are ambitious, and go **beyond the state of the art**)
1.2.	Soundness of the proposed methodology (including **international**, **inter-sectoral** and **interdisciplinary** approaches, consideration of the **gender dimension** and other **diversity aspects** if relevant for the research project, and the quality of **open science** practices)
1.3.	Quality of the proposed **interaction** between the participating organisations **in light of** the research and innovation **objectives**.

50% of weight

1.1.Quality and pertinence of the project's research/innovation objectives

(and the extent to which they are ambitious, and go beyond the state of the art)



Consider including an overarching goal for your project
- keeping in mind the objective of the MSCA SE call:

„*MSCA Staff Exchanges promote innovative international, inter-sectoral and interdisciplinary collaboration in research and innovation through exchanging staff and sharing knowledge and ideas at all stages of the innovation chain. The scheme fosters a shared culture of research and innovation that welcomes and rewards creativity and entrepreneurship and helps turn ideas into innovative products, services or processes*"

1.1.Quality and pertinence of the project's research/innovation objectives

(and the extent to which they are ambitious, and go beyond the state of the art)

1.1.Quality and pertinence of the project's research/innovation objectives

(and the extent to which they are ambitious, and go beyond the state of the art)

Piezoelectricity in two-dimensional (2D) materials **is increasingly important because** of its **potential** in realizing **thin** yet **efficient** and **flexible** piezoelectric devices.

In contrast to traditional three-dimensional (3D) piezo- and ferroelectrics that are prone to size effects, piezoelectricity in 2D materials may be controlled by flexoelectricity and interfaces thus providing significant piezoelectric effect in ultrathin films and crystals.

Equally important, the majority of 2D layered piezoelectrics found so far possess in-plane piezoelectricity and require bending of flexible substrates to activate piezoelectric effect. This severely limits their integration with modern Si technology.

This project aims at **strengthening the piezoelectric activity in 2D materials** via **interface and stress engineering** and **bond control** in order to **reach the maximum efficiency** and other relevant figures of merit.

The **materials list** includes hafnium-zirconium oxide (HZO), transition metal thio/selenophosphates (TPS), graphene on oxide substrates, and polymer PDVF.

(…)

The **multidisciplinary approach** of Piezo2D brings together leading teams in **theoretical physics**, **materials science**, **chemistry** and **instrumentation** working in synergy.

1.1.Quality and pertinence of the project's research/innovation objectives

(and the extent to which they are ambitious, and go beyond the state of the art)

A comprehensive investigation of piezoelectricity in these 2D materials and their relevant device performance is **still at an initial stage** and needs European support.

Concerning piezoelectric energy harvesting, Piezo2D will build a **technology to provide local energy generation** (microgenerators) from the nm- to the micro-scale to **power nano- and microdevices**.

Piezo2D will do so by enhancing and deploying the combined powers of equilibrium and nonequilibrium **thermodynamics** and **atomistic models** with **device physics** and **engineering**.

Research results will underpin future developments of **nanoscale energy devices** for decades to come.

We will also **develop new characterization techniques** and **metrology-inspired protocols** aiming at future standards and their use in the industry.

SMART approach

Research objectives

Keep in mind that research objectives should correspond to the Work Packages under section 3.1

Why your project?

Why do you need to work together on this research?

Explain why a **collaborative approach** is needed to solve the problem and briefly **why** your consortium is best placed to do so.

Describe the importance of the **international, intersectoral and interdisciplinary** aspects of your approach.

Refer openly to the **innovative elements** of this project (topic, consortium, synergies...)

Sustainability of collaboration: describe the **benefits of cooperation** and how they can go beyond this project

Make sure to cite consortium members' work and show the **high-level of expertise within the consortium**

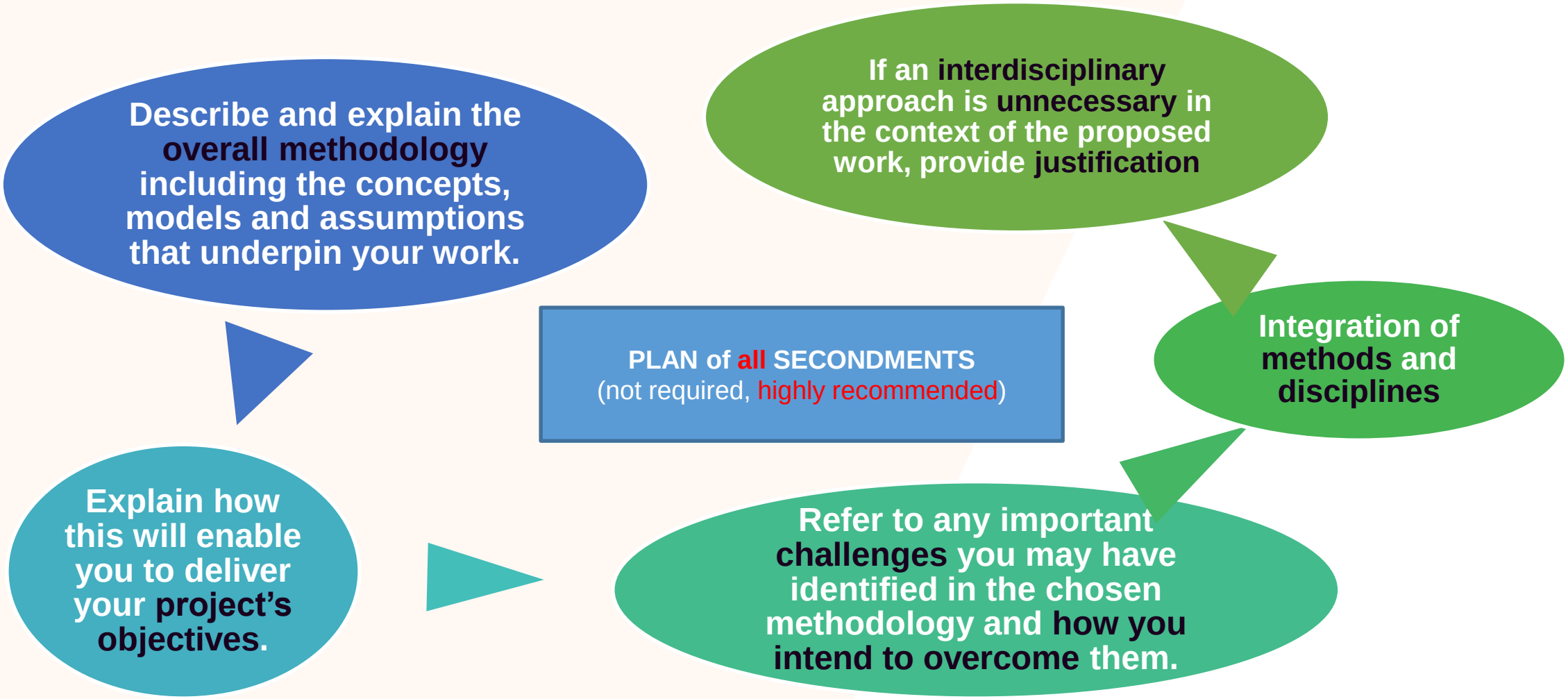
STRENGTHS FROM THE EVALUATION SUMMARY REPORTS

1. *The project objectives are clearly formulated and extremely relevant from both theoretical and policy points of view. Concrete indicators for their measurement are properly defined.*
2. *The research and innovation objectives are very well specified and convincing. The specific training, dissemination and collaboration objectives are also carefully prepared and detailed, which is further clarified by providing a comprehensive breakdown of each type of objective with some level of quantification.*
3. *The quality and novelty of the planned research activities are sufficiently demonstrated and they are relevant to the current state-of-the-art.*
4. *The theoretical framework of the project is sound and of high quality. The proposal presents a convincing state-of-the-art analysis, providing a contextual background to the research. Advancements beyond state-of-the-art have also been sufficiently developed.*
5. *The proposed research and innovation objectives are clearly described, easily measurable and verifiable; the innovative aspects are highly relevant.*

WEAKNESSES FROM THE EVALUATION SUMMARY REPORTS

1. *The research and innovation objectives are defined only in broad terms, without going into detail about possible measurable outcomes for the individual goals.*
2. *The proposed goals and the related work seem overambitious regarding the many different methods and materials.*
3. *The state-of-the-art is not elaborated and referred to the latest literature in sufficient detail. It is not fully clear how the proposed studies will go beyond the state-of-the-art as the specific materials and foreseen applications are not well defined.*
4. *The innovative aspects of the proposal are rather weak since the proposed methods and approaches have already been developed.*

1.2. Soundness of the proposed methodology *(including **international**, **inter-sectoral** and **interdisciplinary** approaches)*



1.2. Soundness of the proposed methodology *(including **international**, **inter-sectoral** and **interdisciplinary** approaches)*

PLAN of all SECONDMENTS
(not required, highly recommended)

2023:
Removal of Table 2 – Interdisciplinary secondments between partners within EU MS/AC participants in the same sector

Explain the added value of:

- **interdisciplinary approach** in terms of addressing your **research objectives** and
- transfer of interdisciplinary knowledge during the **reintegration phase** of seconded staff.

- Ask yourself why this consortium is the best team to address these research objectives from a cohesive, interdisciplinary, and intersectoral point of view.

- Highlight the role of each consortium member in the research programme.

Secondments should mainly be **inter-sectoral.**

Same-sector secondments (that meet the interdisciplinary conditions) in EU Member States and Horizon Europe Associated Countries (MS/AC) are eligible for funding for up to **1/3 of the project total eligible** person-months funded by the EU

Secondments are considered as **interdisciplinary** if the activities performed during the secondment integrate aspects (information, data, techniques, tools, perspectives, concepts or theories) from **two or more different scientific disciplines:**

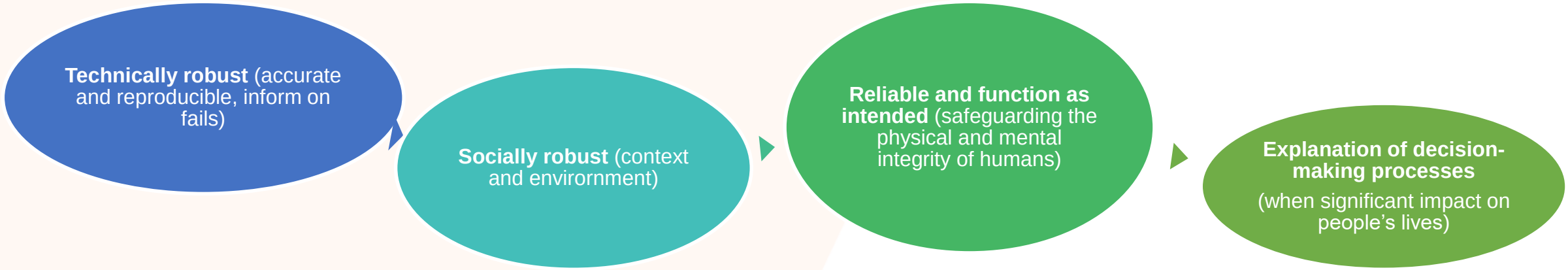
- expert evaluators will consider the **descriptors** available in **part A** (first level of MSCA keywords)

1.2. Soundness of the proposed methodology *(**gender dimension** and other **diversity** aspects, if relevant for the research project)*

- **Content of the planned research and innovation** activities (not: gender balance in the teams in charge of carrying out the project)
- Activities where **human beings** are involved as **subjects or end-users**
- Guidance on methods of sex / gender analysis and the issues to be taken into account: *Standard application form* gives suggestions.

- **Use, develop** and/or **deploy** artificial intelligence (**AI**) based systems and/or techniques

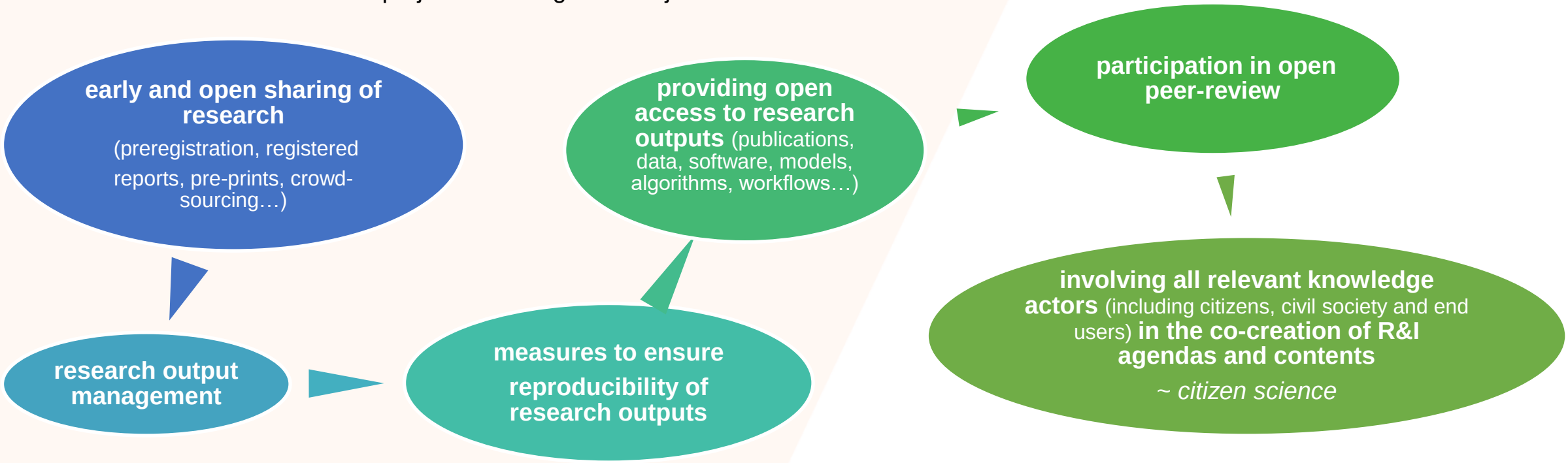
  > demonstrate their technical robustness:



1.2. Soundness of the proposed methodology *(quality of **open science** practices)*

Open science is an approach based on open cooperative work and **systematic sharing of knowledge** and tools as early and widely as possible in the process.

- It should be **integral part of the proposed methodology** (if not > justification)
- How the **choice of practices** and their **implementation** are adapted to the nature of your work? > increase the chances of the project delivering on its objectives

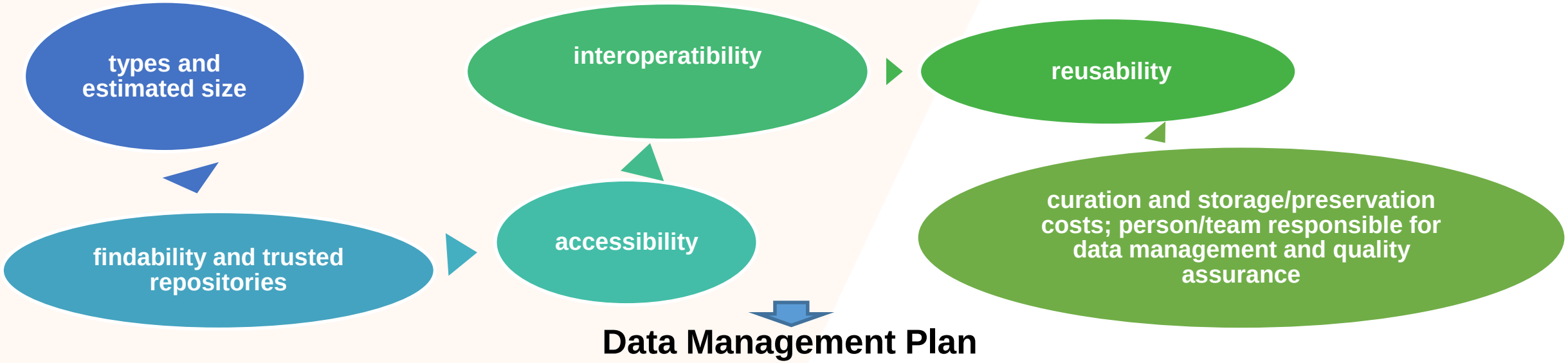


1.2. Soundness of the proposed methodology *(quality of open science practices)*

Research data management and management of other research outputs

If you plan to **generate/collect data** or other research outputs (except for publications) during the project

- How the data will be managed in line with the **FAIR principles**: Findable, Accessible, Interoperable, Reusable (max. 1 page)
- make it **specific** to your project



1.2. Soundness of the proposed methodology – comments by expert evaluators

STRENGTHS FROM THE EVALUATION SUMMARY REPORTS
1. *The overall methodology is appropriate and very well describes the challenges to be faced. Integration of methods and disciplines to pursue the objectives is well above average.* 2. *The project benefits from a very good methodology. It emphasizes the challenges which could be met during the realization of the foreseen tasks.* 3. *The interdisciplinary and intersectoral nature of planned activities is well demonstrated: the proposed activities will bring together a comprehensive international multidisciplinary network of experts, and will be supported by a well-structured secondment programme.* 4. *The gender dimension is well addressed in terms of the research with consideration of female preferences and requirements being considered, and also in terms of project implementation through a gender equality plan.* 5. *Open data sharing between partners has been adequately described based on previous experiences and development of tools for dana sharing. An extensive data management plan according to the FAIR principles is provided.*
WEAKNESSES FROM THE EVALUATION SUMMARY REPORTS
1. *The different methodologies to be used have not been sufficiently illustrated and, it is not sufficiently clear and specific how they can be linked to the identified scientific objectives to guarantee their achievement. The provided description does not offer sufficiently convincing evidence that all the defined objectives can be realistically achievable.* 2. *The proposal does not sufficiently demonstrate the interactions that could lead to interdisciplinarity. The potential interactions are listed generically; these do not convincingly demonstrate the integration of the current expertise and methods with the disciplines mentioned.* 3. *The intersectoral, international and interdisciplinary aspects of the proposed secondments between participants are not sufficiently demonstrated.* 4. *The gender dimension of the research topic is not taken into account and a justification for this is missing from the proposal.* 5. *Open science is discussed in a short and not very detailed format. A data management plan is only superficially addressed and no dana handling according to the FAIR principles is mentioned.*

1.3. Quality of the **proposed interaction** between the participating organisations in light of the research and innovation objectives.

Contribution of **each participating organisation** in the activities planned, with particular emphasis on the scientific objectives described in section 1.1.

Justification of the **main networking activities** (e.g., workshops/trainings/conferences, etc.).

Contribution of each participating organisation

in the activities planned, with particular emphasis on the scientific objectives described in section 1.1.

Clearly state what each participating organisation will **contribute** towards achieving the research and knowledge transfer objectives – you can use a table for brevity and clarity.

Include their expertise, their contribution to **networking events**, and their level of participation in the secondments.

There should be an **explicit link** between networking activities and specific objectives of the project.

Include **details on** how many **secondments** are planned for the project and how many person months in total**.**

Justification of the main networking activities

(e.g., secondments/workshops/trainings/conferences, etc.).

Describe the networking activities that will be organised to share knowledge e.g., workshops, meetings, trainings, online networking and knowledge sharing. Highlight interdisciplinary and intersectoral aspects to the networking and training activities.

Justify how these will contribute to the knowledge-sharing objectives – explain why you have chosen these particular activities and how are they related to the research objectives.

It could be valuable to open up some events to the wider research community, e.g., a final conference or summer schools open to researchers who are not part of the network/consortium.

Use a diagram to show the flow of people around the consortium.

STRENGTHS FROM THE EVALUATION SUMMARY REPORTS

1. *The proposed secondments between participants in EU/AC in the same sector are considered to be interdisciplinary and are accepted, up to the maximum of 1/3 of the total months funded by EU.*
2. *The proposal demonstrates a broad interdisciplinary and inter-sectoral network for research and knowledge sharing, achieved through well balanced and well-justified secondments in terms of the MSCA - SE scheme.*
3. *Each partner's contribution to the project and their expertise and involvement in the scientific activities are convincingly presented. Particularly the diagrams showing the interactions between work packages and the secondment periods between participants are clear and informative.*
4. *The proposal provides credible details on the expertise of each participant and how they are brought together to achieve the project's objectives.*
5. *The contribution of each participating organization to the planned activities and suitable knowledge sharing is well balanced and of good quality.*
6. *The benefits of the main networking activities via training, courses, and seminars are well justified by the proposal.*

WEAKNESSES FROM THE EVALUATION SUMMARY REPORTS

1. *The approach ensuring knowledge sharing between participants is not explained with the necessary level of detail and activities devoted to knowledge transfer are not clearly described.*
2. *The proposal does not sufficiently demonstrate the interactions that could lead to interdisciplinarity. The potential interactions are listed generically; these do not convincingly demonstrate the integration of the current expertise and methods with the disciplines mentioned.*
3. *The interactions between participating organisations, particularly between academic and non-academic beneficiaries, and for staff exchanges, are insufficiently elaborated. Specifically, networking activities, including the workshops and thematic schools, are not sufficiently detailed in relation to individual contributions.*
4. *The challenges for each WP and the means to be used by the participants to address and overcome these possible challenges are not credibly identified.*
5. *The proposed contribution of critical resources for industry and evidence-based information for policymakers is somehow overstated.*
6. *The justification of networking activities is offered in general terms, mainly presenting the expected activities rather than their purpose.*

Take-home messages

- „Excellence” part stands for half of your proposal success (50% of weight);
- Make sure you have clear and specific research objectives
- Make sure they are directly connected to work packages and planned activities;
- Think very especifically what are the strengths and uniqueness of your proposed consortium.
- Get everyone involved in the project activities and plan networking activities carefully!