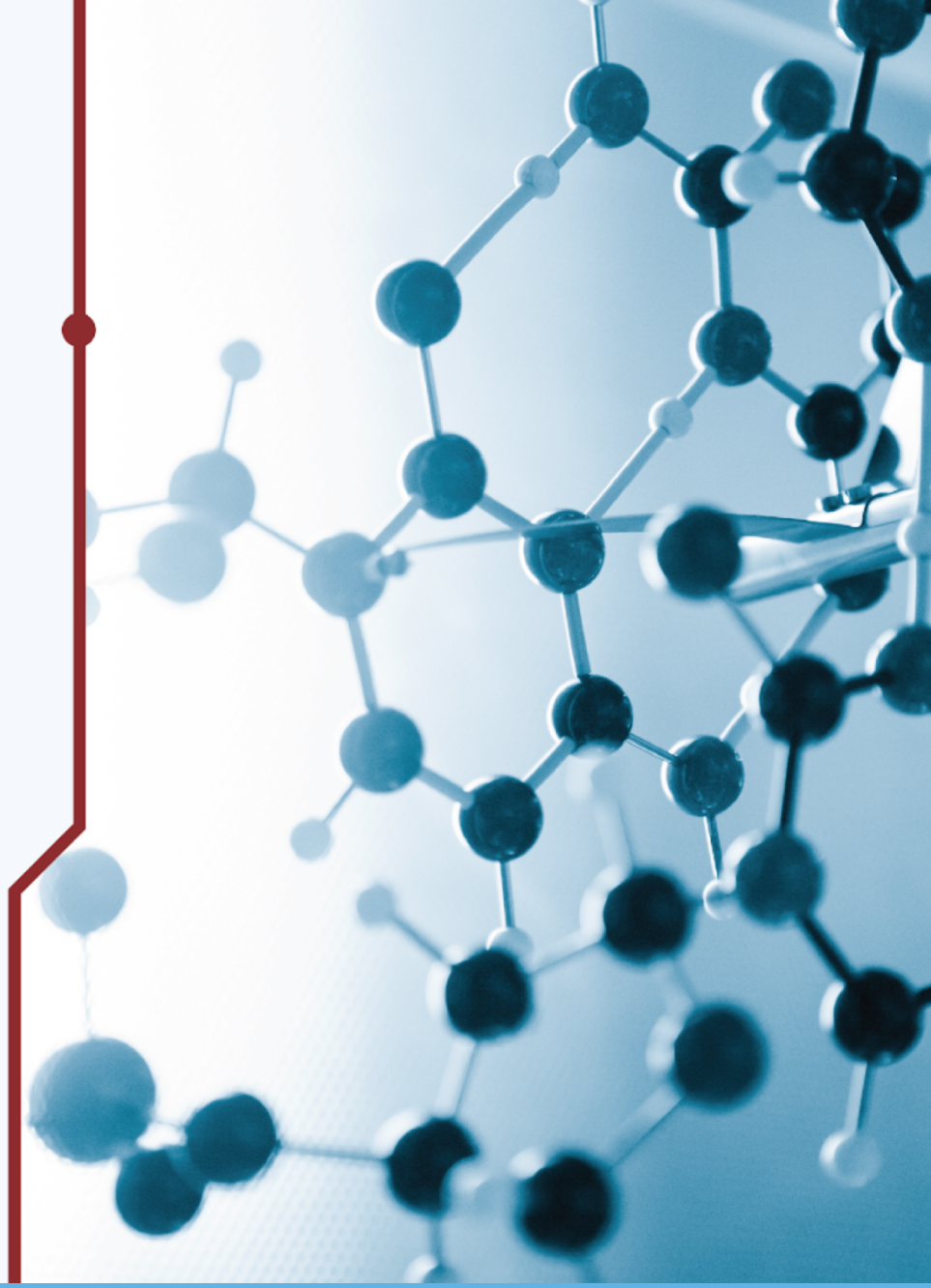
REINFORCE

REsearch INfrastructures FOR Citizens in Europe

Work Packages presentation

WP10 - Raising Awareness & Sustainability



General Assembly – 31 August 2022

Francesco Mureddu – WP leader (The Lisbon Council)
Grace Milne - Project Manager and Research Associate (The Lisbon Council)
Francesco Osimanti – Senior Marketing Manager (Trust-IT)
Diego Simoni – Digital Marketing specialist (Trust-IT)

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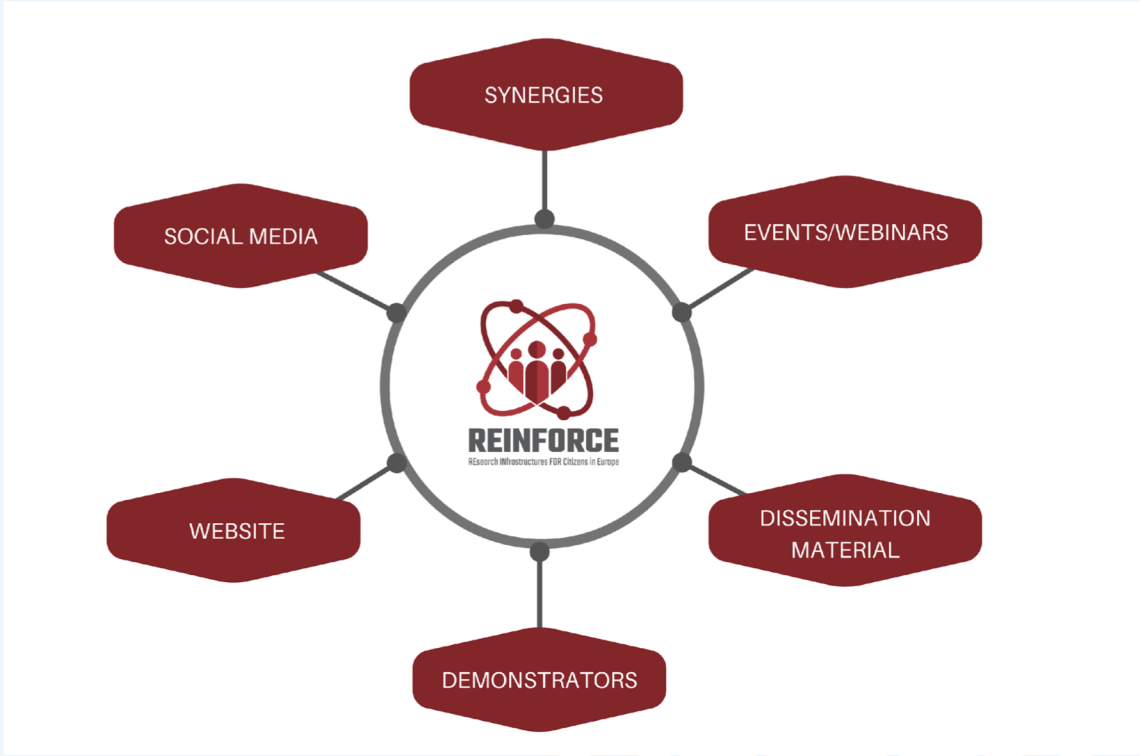
Raising Awareness & Sustainability

WP10 objectives

- Maximize visibility & outreach
- ***Awareness raising of scientific and policy community & general stakeholders***
- **Build up an engaged community**
- Effective Communication & Dissemination Strategy
- Ensure long-term sustainability of the project
- Promotion of Users «Success Stories» on the website
- ***Prepare a Roadmap to establish REINFORCE's approach as a benchmark for Citizen Science projects***
- Run exploitation activities to promote Demonstrators



Creating a solid community and liaising with a number of reliable stakeholders, to stimulate interest in the project and the demonstrators as defined for the Plan for the Communication and Dissemination of Results

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WP10 Deliverables & Milestones

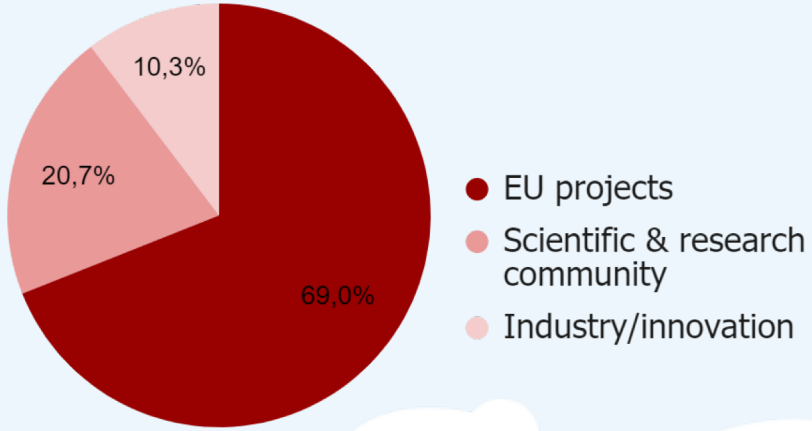
N°	Deliverable Title	Lead Beneficiary	Type	Dissemination Level	Delivery Date	Delivered Date
D10.1	Plan for the Communication and Dissemination of Results	Trust IT	Report	Public	March 2020	March 2020
D10.2	Dissemination materials	Trust IT	DEC	Public	March 2020	March 2020 November 2022 (2nd Iteration)
D10.3	Policy Roadmap on Research infrastructures for citizen science in Europe	Lisbon Council	Report	Public	November 2022	-
D10.4	Exploitation Report	Lisbon Council	Report	Public	November 2022	-

N°	Milestone	Month	Means of verification
MS1	Consortium Meeting (Consortium Meeting 1, CM1)	M1	Planning and Organisation of the work. Internal management structure. Communication Channels. Detailed Planning and Decision-Making Process
MS6	Roadmapping	M32	Finalization of the pilots with the users' communities, Integration and Analysis of the results, Initiation of the Roadmapping work. Exploitation and sustainability in progress. The 6th Consortium Meeting (M32) is focusing on an initial assessment of the pilot phase.
MS7	Closing Conference	M36	Open Classroom Conference, Delivery of the REINFORCE Roadmap, Lessons Learnt & Recommendations, Delivery of the Feasibility and sustainability Plan, Delivery of the QA Report, Final Project Report (Consortium Final Meeting)

Deliverables timely submitted.

T10.1 Plan for the Communication and Dissemination of Results

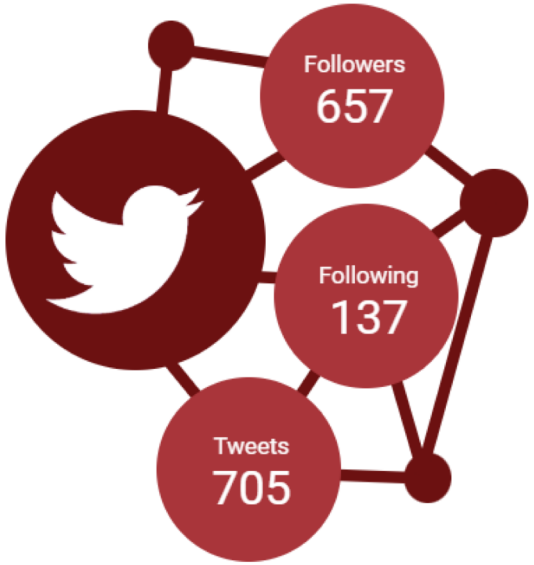
32 active collaborations with relevant stakeholders

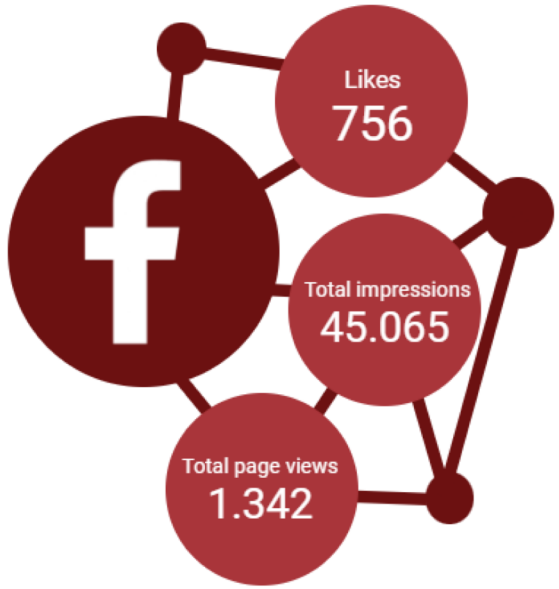


Strong partnerships with H2020 projects and research communities have led to increase the visibility of the project on external communities. +140 Stakeholders reached out in conjunction with the release or promotion of major events or projects' outputs

T10.1 Plan for the Communication and Dissemination of Results

Social media community





LinkedIn:

- **754 Followers**

LinkedIn page Visitors in the last quarter (April – June 2022)

Project hashtag: ***#citizensREINFORCEscience***

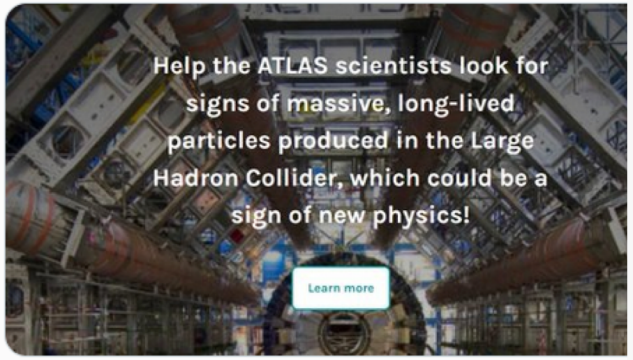
Social media channels populated on regular basis and constant growth on all the platforms since the project offset
Twitter : +176 followers within our target audiences from May 2022 (interim review)
LinkedIn: +89 followers within our target audiences from May 2022 (interim review)

T10.1 Plan for the Communication and Dissemination of Results
Social Media 1/2

Social Media ongoing campaign (weekly basis) to bolster the promotion of each Demonstrator section on the Zooniverse, key updates and collateral Reinforce or third-party Events

ReinforceEU @ReinforceEU · Jan 3

Help the @ATLASexperiment scientists look for signs of massive, lo particles produced in the Large Hadron Collider @CERN, which cou sign of new #physics! @CMSExperiment #CitizenScience
Support our research on @the_zooniverse 🙌
zooniverse.org/projects/reinf...



EGO-Virgo and 9 others

4 6

ReinforceEU @ReinforceEU · Jul 4

"From Open & #CitizenScience to activism: roles for academic staff" An interesting Webinar from our @INOSproject colleagues to better understand how #academia can lead & foster social action triggered by pressing social issues
📅 07 July, 13:30 CEST
inos-project.eu/2022/06/08/fro...

OeAD Citizen Science and 8 others

16 34

ReinforceEU @ReinforceEU · Jan 12

Through Muon #Tomography we can probe the internal structure of massive objects, like volcanoes 🌋 with particles from stars & galaxies far far away 🌠
Help us to identify these particles inside our detectors & join us on @the_zooniverse 🙌 #CitizenScience
zooniverse.org/projects/reinf...

EGO-Virgo and 9 others

ReinforceEU @ReinforceEU · Jan 5

GWITCHHUNTERS aims at improving the performance of #GravitationalWave detectors in experimental study of the #Universe to better understand disturbances & find solutions.
Support our research on @the_zooniverse to unlock the the secrets of the Universe! 🔭
zooniverse.org/projects/reinf...

EGO-Virgo and 9 others

ReinforceEU @ReinforceEU · Jul 1

"#Sonification - Increasing the senses, increasir at the training modules as part of our sonorisatic @REINFORCE @CONICETDialoga @ego_virgo #
reinforceeu.eu/about/sonifica...

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T10.1 Plan for the Communication and Dissemination of Results
Social Media 2/2

ReinforceEU @ReinforceEU · Apr 26

.@ReinforceEU attended the "Engaging Citizen Science Conference" at @AarhusUni with a dedicated Workshop to show how the project can boost #scientific literacy amongst citizens & how an inclusive-design approach can better engage citizens! #CitizenScience
reinforceeu.eu/demonstrators

OeAD Citizen Science and 9 others

5 14

ReinforceEU @ReinforceEU · Jul 13

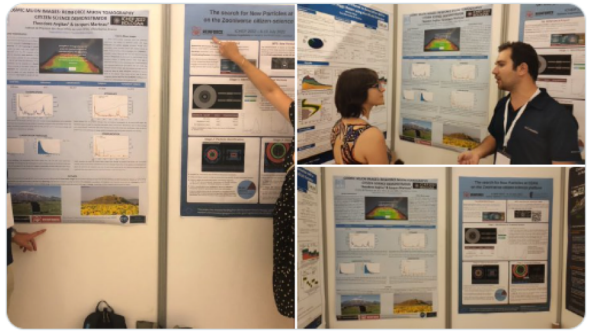
Some pics from an exciting Day 2 at @ReinforceEU Summer School jumping from #GravitationalWaves, through virtual visits of the @ego_virgo GW Detector & hands-on activities on #Muon tomography and #Cosmic Rays 🎣🔭
Stay tuned for more updates!
reinforceeu.eu/international-...

INFN and 9 others

2 12

ReinforceEU @ReinforceEU · Jul 9

.@ReinforceEU proudly on stage at #ICHEP2022 in Bologna 🇮🇹 Francesco di Rienzo @INFN_ & Gwen de Wasseige @gwendewasseige attending the poster session & showcasing #GWHunters, #Particles at @CERN and #Muon Tomography demonstrators 🙌
#CitizenScience



EGO & the Virgo Collaboration and 9 others

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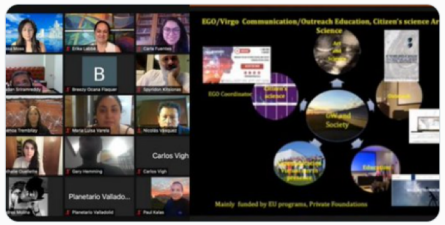
ReinforceEU @ReinforceEU · Nov 26, 2021

The 2nd Workshop on "Astronomy Beyond the Common Senses" brought together astronomers, educators, disability specialists, students, and science communicators, providing a chance to share strategies on the #CitizenScience role.
Enjoy the registration:
reinforceeu.eu/astronomy-for-...



EGO & the Virgo Collaboration and 9 others

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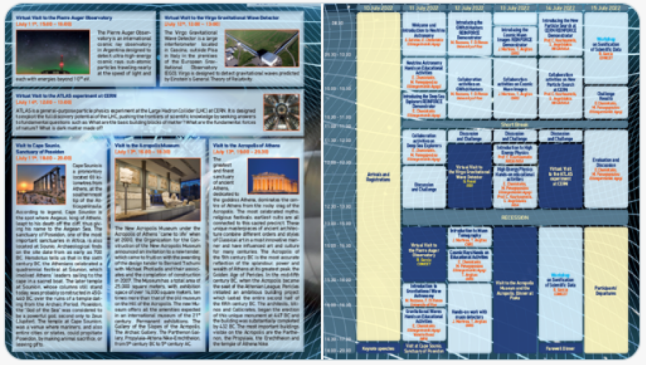
ReinforceEU @ReinforceEU · Jul 8

Get ready for the 2022 @ReinforceEU International Training Course that will take place next week!🙌
Check out the programme in the attached photos!
For extra info, don't hesitate to visit the International Training Course Website⬇️
reinforceeu.eu/international-...

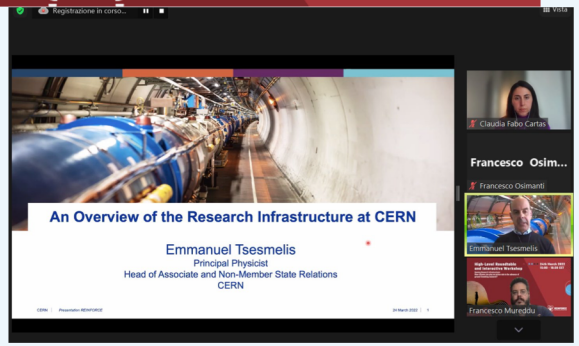


ESIA - European School Innovation Academy and 9 others

2 4

Exhaustive coverage of Reinforce's events (ICHEP 2022, International Summer Training Course, "Astronomy Beyond the Common sense" Workshop, "Engaging Citizen Science" Conference 2022

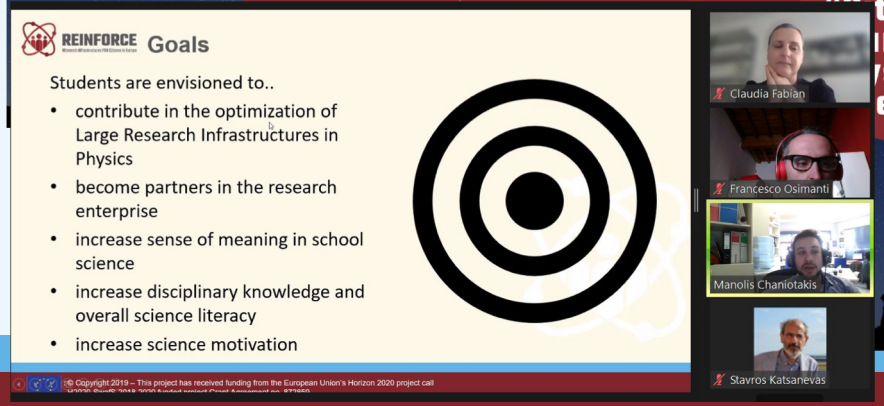
T10.1 Workshop 24 March 2022
Opening Research Infrastructures - How citizens can play an active role in the advance of ground-breaking research?



- *Esteemed guests from CERN, ECSA and a Policy Officer from the JRC EC (Marina Manzoni)*
- *59 engaged attendees spanning from policy makers, education-policy-experts, think tankers and academics, RRI reps*

Webpage & recording: https://www.reinforceeu.eu/events/webinars/research-infrastructures-citizens-science

T10.1 Workshop 19 May 2022
Interactive Workshop “Citizen science and data sharing boosting large physics infrastructure research”



- *Long format focusing on Large Research Infrastructures in physics, live demonstration of one of the Zooniverse Reinforce demonstrator, hands-on activity for the audience.*
- *34 registered attendees plus 59 connected on live streaming*

Webpage, slides & recording:
https://www.reinforceeu.eu/citizen-science-physics-workshop-reinforce

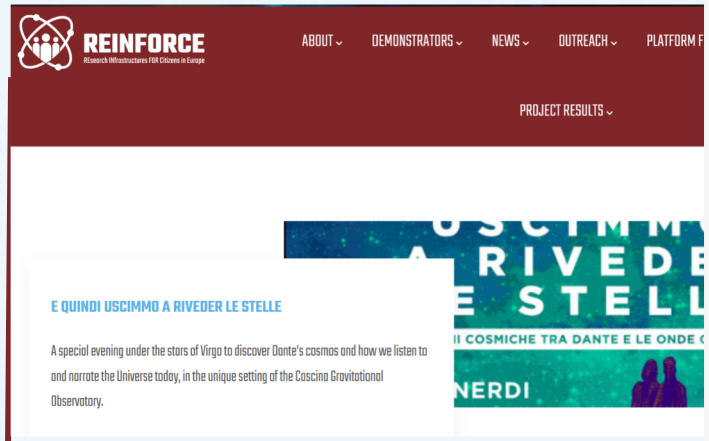
REINFORCE T10.2. Marketing, Communications materials & Activities

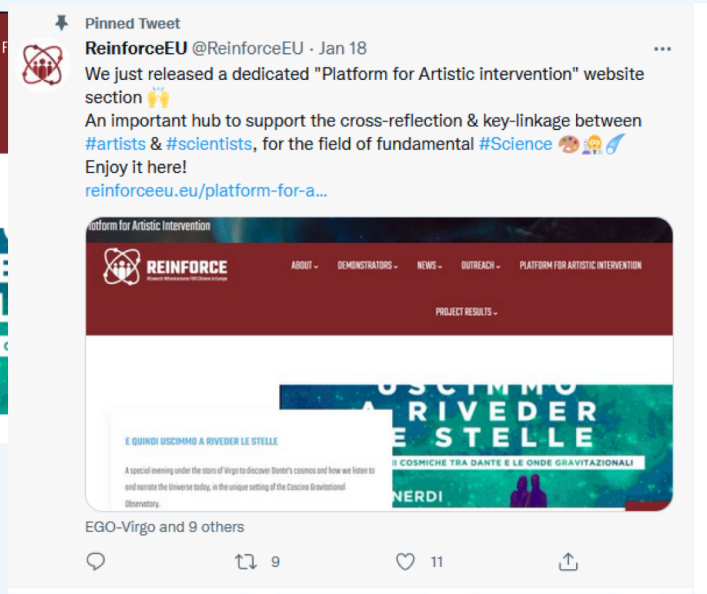
REsearch INfrastructures FOR Citizens in Europe

Website news

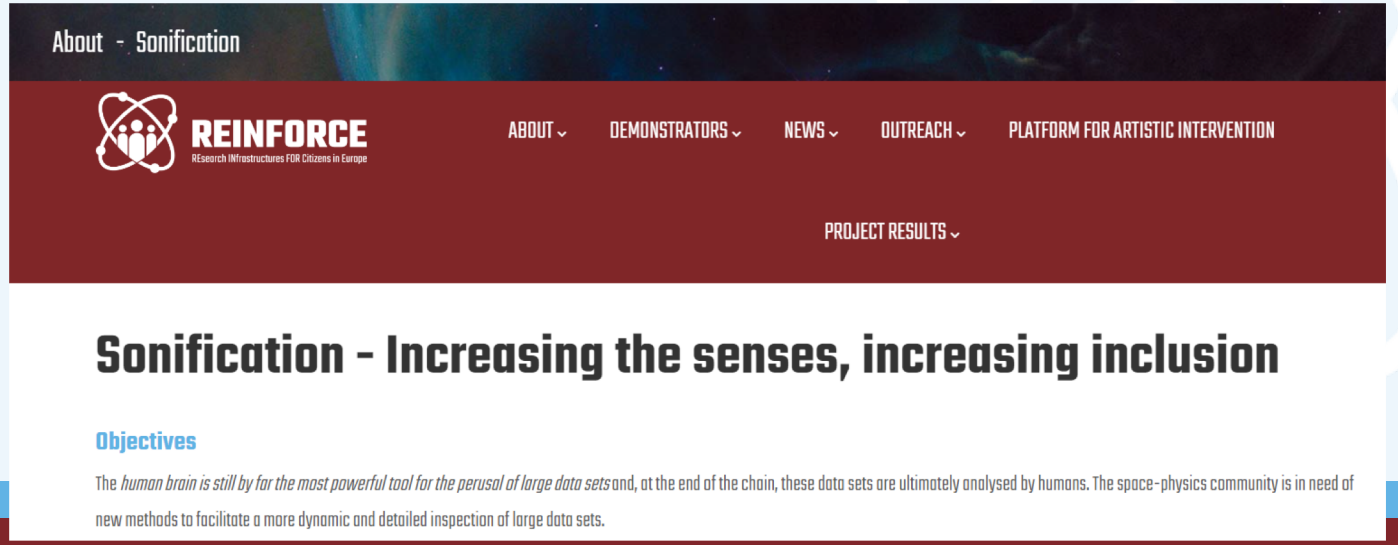
Launch of the “Platform for Artistic Intervention” https://reinforceeu.eu/platform-for-artistic-intervention

A website area to showcase the cross-reflection between artists and scientists in the field of fundamental science

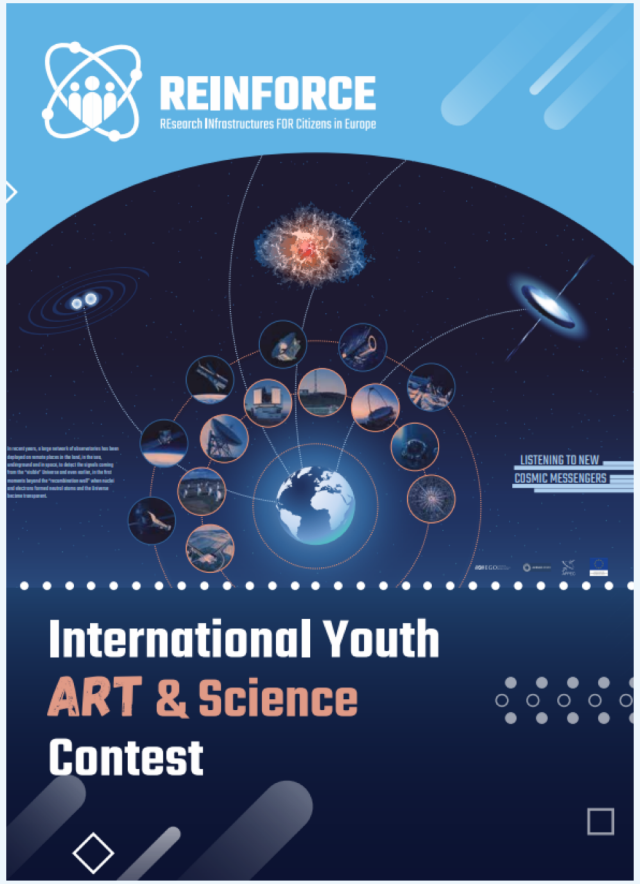


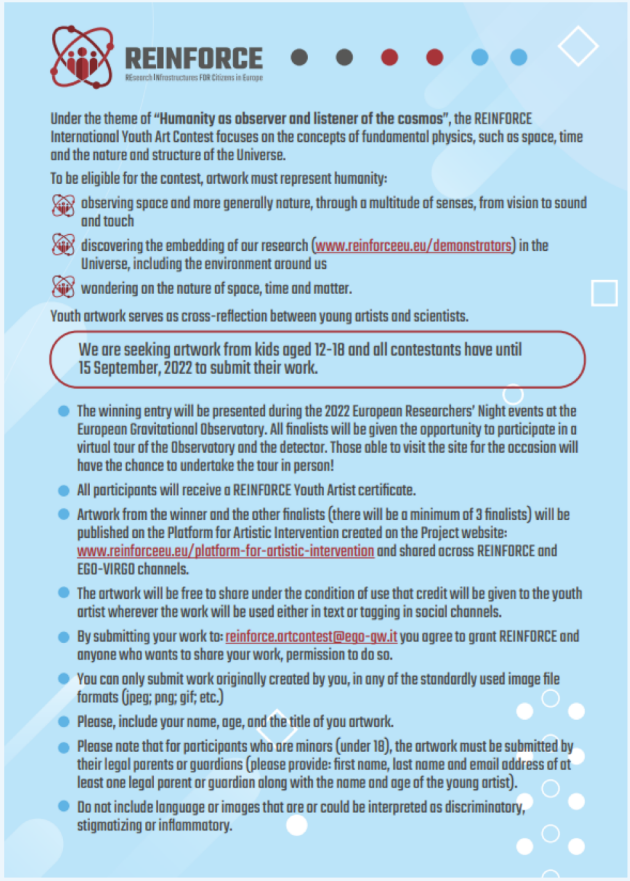


Launch of the *Sonification* section as part of our strategy to engage citizens in online frontier science, through our dedicated work package (Wp7) https://www.reinforceeu.eu/about/sonification-increasing-senses-increasing-inclusion



T10.2. Marketing, Communications materials & Activities
Graphic design





Brand new brochures to back up the launch of the International Youth ART & Science Contest

T10.3. Policy Roadmap on Research infrastructures for citizen science in Europe (M30-M36)

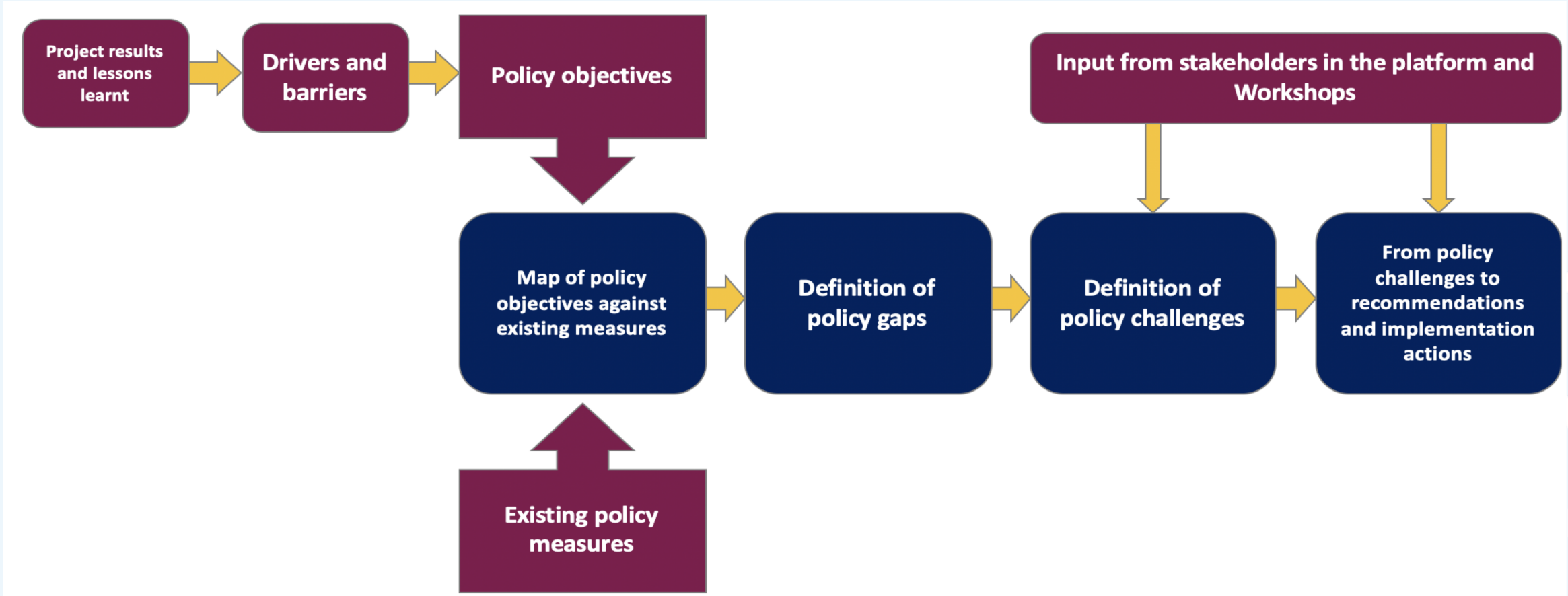
- Output: D10.3 Policy Roadmap on Research infrastructures for citizen science in Europe
- The aim of the Policy Roadmap on Research infrastructures for citizen science in Europe is to put forward a set of policy recommendations that should be followed in order to make research infrastructures a key player in citizen science through a consistent involvement of citizens.
- The roadmapping exercise encompasses three main steps:

1. Identification of the policy gaps that hinder the uptake and implementation of citizen science experiments in research infrastructures

1. Elaboration of a set of future policy challenges and implementation scenarios related to the development of research infrastructures for citizen science

1. Definition of a set of practical policy directions and recommendations for all stakeholders involve

T10.3. Policy Roadmap on Research infrastructures for citizen science in Europe (M30-M36)



T10.3. Policy Roadmap on Research infrastructures for citizen science in Europe (M30-M36)

Questions tackled by the roadmap:

- Which major policy gaps and challenges should be considered and addressed for normalizing the implementation of citizen science in research infrastructures?
- What kind of instruments and incentives are necessary to tackle these challenges?
- What is the anticipated impact of these challenges to each policy domain and to the society?
- Which are the broad recommendations for policy makers, researchers and civil society organizations that are meaningful to accelerate the take-up of citizen science in research infrastructure?
- What actions should be put in place in order to implement such recommendations?

T10.3. Policy Roadmap on Research infrastructures for citizen science in Europe (M30-M36)

1. Introduction
2. Methodology
    - Roadmapping Exercise
    - Methodology for Gap Analysis
    - Input collection activities performed
        - Input from literature and events
        - Input on the Roadmap Structure in Commentable Format
3. Citizen science in research infrastructures
4. Results and lessons learned from the project
5. Identification of gaps
6. Policy challenges

T10.3. Policy Roadmap on Research infrastructures for citizen science in Europe (M30-M36)

7. Recommendations for follow up actions
   - Recommendations at EU level
   - Recommendations at National level
   - Recommendations at Regional/local level
8. Bringing the identified policy interventions to implementation
   - Action plan for implementation
   - Challenges and opportunities
   - Feasibility analysis
9. Conclusion

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Interim policy gaps/1

Policy Objective	GAP justification	Timescale
PO1: to support the development and maintenance of seamless open access to free of charge services, resources and expertise for all researchers and citizens scientists	Collaborative infrastructures are already in place for several research objectives (e.g. see the CERN, EGI, etc). Other have to be further developed in the coming years. For example, the European project PARTHENOS - which focuses on interoperability within humanities research - finds that research infrastructures have demonstrated they have the capacity to bring the public and scientists together by making resources and information available that are typically limited to scientists and institutions (Trinity College Dublin, 2019). Specific to the use of citizen science within research infrastructures, research and policy reflection is limited and niche, and as such, citizen science experts report that the policy challenges identified in citizen science in general also apply to the use of citizen science in research infrastructures (Cartas, 2022). Therefore, the most important gaps to be covered to this end are related to: their openness level not only for scientific organizations, but also for citizens as scientists; sustainability; interoperability; etc.	Short Term
PO2: to support the development of open and cloud-based solution for advanced computing and data analytics in research and innovation	Development of tools for data gathering, management and for knowledge extraction is fundamental to gain advantages from the large quantity of data that CS can provide. However, it implies the strict collaboration among scientists-citizens-sw developers to achieve solution that are data-centric, usable from the citizens as scientists, affordable from the economic point of view and sustainable.	Short Term
PO3: to support the establishment and enlargement of an open-data space for scientists and citizens scientists	Data openness to all, including citizens as scientists is an important issue to be addressed in CS. This is also related to data ownership, data traceability, data transparency, data quality, etc. This also include issues related to the development of low-cost tools and system of incentives for data gathering and sharing, as well as for data elaboration and for knowledge extraction.	Short Term
PO4: to support definition of standards for both technological tools for data collection and data quality in CSs initiatives	This gap will be covered mainly as consequences of the policy actions foreseen for PO1-PO2-PO3. However, dedicated effort to this end it is necessary to accelerate the achievement of the policy objective.	Mid Long Term

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Interim policy gaps/2

Policy Objective	GAP justification	Timescale
PO5: to facilitate collaboration among researchers and citizens scientists to conduct world-class research and innovation better addressing societal goals	This gap has to be tackled from two direction: on one side it requires significant effort to support the learning processes of the citizens scientists through capacity building strategies aimed at leveraging their knowledge and understanding on the research contents and on the way to conduct research activities; on the other side it requires to train the trainers as well as the researchers on how to approach CS initiatives and the interaction with the citizens. Benefits in closing this gap are several such as: empowerment and better engagement of citizens as scientists; more inclusivity of all categories of population; more quality and quantity data from scientific point of view; increase of trust in CS from both the scientific community and citizens point of views.	Short to Mid Term
PO6: to increase the AI literacy and IT capabilities of citizens interested in science	Several initiatives to cover the ICT readiness and literacy gap have been organized till now to increase inclusivity of people that are low skills. However, to support CS development and scale up it is needed a specific effort in this direction to allow all segments of population to be part of the CS initiatives.	Short to Mid Term
PO7: to facilitate the citizens in contributing to produce of new knowledge addressing societal problems	A Capacity buildings action plan to address this objective would be of great importance to give citizens capabilities and knowledge to explain their societal needs into research initiatives in collaboration with scientific communities. Several benefits can be gained in covering this gap which include among the others: scientifically sound evidence-based research on societal problems closer to the needs of citizens; more effective social policies; increase of citizens participation of the public debate on societal changes and SDGs.	Short to Mid Term
PO8: to make citizens science more inclusive and promoting gender balance	Education and training, together with empowerment strategies will help to close this gap. Several initiatives are already funded to this end, some more are needed to increase the number of citizens which can experience CS initiatives.	Mid Term

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Interim policy gaps/3

Policy Objective	GAP justification	Timescale
PO9: to support Citizens Scientists in contributing closing the gap between Science and Society	This gap will be covered mainly as consequences of the policy actions foreseen for PO5-PO6-PO7-PO8-PO10. This is also related to PO12 and with the definition of education frameworks and pathways helping citizens to increase their knowledge and capabilities in more structured ways, and, at the same time, facilitating researchers who practice CS to conduct research initiatives in more effective way. Citizen science has a proven role in strengthening research infrastructures. The European Strategy Forum on Research Infrastructures recommends the use of participatory methods - such as citizen science - to bring science and citizens closer together (ESFRI, 2020).	Long Term
PO10: to instil the culture of democratization in science and to increase society's science capital	This gap will be covered mainly as consequences of the policy actions foreseen for PO5-PO6-PO7-PO8-PO9.	Long Term
PO11: to support the definition and establishment of New Governance models and model of operation making CS a sustainable institutional practice	This is an important gap, and it is one of the most difficult to be closed. To support CS development and scale up, scientific communities need to change their behaviour and increase the trust about the value added of CS data from the scientific point of view. However, without a significant change in the governance models of the research organizations as well as in their operation processes these goals would be rather difficult to achieve. It also includes the definition of career pathways for scientists who want to develop research though CS initiatives.	Mid to Long Term
PO12: to support the development of Impact Assessment framework showing effectiveness of CS in evidence-based research initiatives especially for societal challenges	In a scientific community there is an initial attempt to define IA framework for CS initiatives. This is also evident in some EC funded initiatives on going. However, a clear policy effort to close this gap is fundamental for several reasons: increasing the evidence that CS results are valuable for research objectives as well as for policy objectives; increase the quantitative data available for research which use AI tools; increase trust in science of the citizens as well as the trust of scientific community in citizens as scientist; etc.	Mid term

Interim policy gaps/4

Policy Objective	GAP justification	Timescale
PO13: to raise awareness among citizens as scientists and scientific communities about the significant contribution which citizens can provide in collecting valuable evidence for measuring impacts' indicators (e.g. SDGs indicators)	This is consequence of the previous objectives with particular reference to PO12. However, dedicated communication and awareness creation strategies need to be designed to this end.	Mid term
PO14: to facilitate the establishment of a Community of Citizens Scientists extending from early-school classes to senior citizens	Community of citizens have been in place since years. Some other are growing thanks to EC and other initiatives. However, it is important to define clear strategies to support their establishment as well as their scale up and sustainability over the time.	Short Mid Term
PO15: to maximising the relevance and excellence of citizen science and scaling up citizen science	This gap will be covered mainly as consequences of the policy actions foreseen for PO12-PO13-PO14.	Mid Long Term
PO16: Increase the maturity level of CS in policy making processes at National level and develop an EU common approach to CS initiatives	This is a fundamental gap to be covered to make CS effective approach to address societal problems closer to the needs of the citizens. Each EU MSs has at the moment a different level of maturity in perceiving CS as valuable assets to address SDGs goals. However, increasing such level for all MSs and to reach a common understanding on what CS is and to what extent it can provide valuable contribution to society through evidence-based data and knowledge is an important step to establish a common approach to develop CS at EU level.	Long Term

Interim policy challenges/1

- **Data quality and management**
  - The creation of large datasets, thanks to activities like monitoring, observing, and crowdsourcing, create a series of implications both for citizens and for professionals
  - Citizens often might not have the necessary training, and much of the work falls on the professional figures (data scientists especially)
  - Data harmonisation and collected for specific purposes

- **Administration and governance**
  - Fostering a supportive ecosystem for citizen science is a key task and challenge for policymakers.
  - In relation to funding, citizen science projects have different funding needs to traditional scientific projects.

- **Inclusion and diversity**
  - Depending on the topic, there are different level of barriers to participation in citizen science projects. This is especially true for minorities and underserved communities
  - The development and regulation of citizen science could help to improve equity of access and participation in both science and education in informal learning environments

Interim policy challenges/2

- **Needs and priorities**
  - Different actors may have different goals (students, teachers, researchers, institutions)
  - Tensions may arise due to the dissimilar interests of scientific and public stakeholder groups in the wider field of public participation in scientific research
- **Co-creation**
  - Moving beyond gathering specimens and analysing data, citizens have the capacity to be immersed in the entire scientific process in citizen science projects.
  - The three types of citizen science are contributory, collaborative and co-created, with differing levels of citizen involvement and responsibility in each (Bonney et al., 2009).
  - Co-created citizen science involves the highest degree of citizen participation and requires two-way dissemination to succeed
- **Managing expectations**
  - Not many projects reflect on the use of citizen science, but just on the challenges of the topic they are investigating from time to time
  - Terminology fundamental here: “citizen science” should incorporate more aspects of public engagement in science and not be described as only “individual measurement and data collection”
  - Topic is very important, too. Some topics are more suitable than others for citizen science frameworks

Interim policy challenges/3

- **Advocacy role**
  - Citizen science should encourage individuals to take an active role in their communities - especially on projects focusing on environmental activism and climate change
- **Formal and informal learning environments**
  - In learning environments, the learner acquires pre-determined knowledge and values
  - In citizen science he/she learns continuously through active citizenship, which may result in social transformations
  - In citizen science activities, practitioners, and participants may not be able to retain their usual roles in some learning environments
  - Informal learning environments are still somewhat underestimated
- **Project evaluation**
  - Not many projects reflect on the use of citizen science, but just on the challenges of the topic they are investigating from time to time
  - Terminology fundamental here: “citizen science” should incorporate more aspects of public engagement in science and not be described as only “individual measurement and data collection”
  - Topic is very important, too. Some topics are more suitable than others for citizen science frameworks

Interim policy recommendations/1

- Introducing citizen science in educational strategy
  - Support the harmonization of educational strategies developed by research organizations across EU Member States, and continue to downstream resources to EU Member States and Regions on related policy domains and provide funding schema for educational pathways on CS.
- Boosting evaluation and monitoring of citizen science
  - Ensure the alignment between actions taken on CS impact assessment and EU policy domains, such as environmental policy, science and technology, digital transformation, and regional development.
- Including educators in program design
  - Design and implement training activities aimed at training the trainers of citizens interested in CS. Encourage co-design of educational programs for citizens which are interested in CS. Support inclusive educational programme for CS initiatives.
- Community establishment, scale-up, sustain and engagement
  - Support the harmonization of initiatives aimed at establishing, scaling-up, sustaining, and engaging communities taken by research organizations across EU Member States. Ensure the collaboration between said initiatives toward a EU-wide community. Support the development and collection of guidelines and good practices.

Interim policy recommendations/2

- Boost digital technology
  - Promote the development or adoption of standards and good practices on the development of digital solutions for CS. Incentivize the development of guidelines for the development of digital solutions for CS, such as accessibility guidelines. Encourage innovation in the development of digital solutions for CS, such as new business models. Encourage the development of digital solutions for CS that are interoperable between them and with existing portals to streamline data workflows.
- Support the adoption of technical instruments
  - Support initiatives increasing the level of use of technology by citizens scientists. Support awareness activities and incentives for motivating citizens interested in science in using technological instruments in CS projects. Promote actions reducing cost of technical instruments used in CS initiatives. Support initiatives increasing ICT literacy of citizens interested in science projects. Support the increase of readiness level of citizens and facilitating ICT inclusion initiatives.
- Prioritising STEM in education
  - Support initiatives introducing STEM in education. Promoting exchange of best practices of STEM in education. Increase the funding programme for STEM in education initiatives which are co-developed for supporting CS projects. Encourage the monitoring and assessment of STEM in education impacts. Design awareness and incentives for STEM in education initiatives providing contribution to CS scale-up. Foster the development of STEM educational resources that centre around the engagement of minorities and inclusivity.

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Interim policy recommendations/3

- Networks and community platforms
  - Stimulate collaborations in networks and communities through platforms allowing to address mutual benefits, expand capacity and leverage expertise and resources. Facilitate access to and re-use of resources on interoperability and accessibility from other domains for CS platforms.
- New rules of attribution of scientific discoveries
  - Define IPR guidelines for CS projects. Promote best practices and knowledge exchange of rules and guidelines for involving citizen scientists in whole CS project life cycle. Encourage the organization of prizes and other initiatives to acknowledge the conjoint active participation of scientists and citizens interested in science in successful CS projects. Encourage the establishment of CS scientific journals.
- Incentives to open data on the side of research infrastructures
  - Support the definition of incentive schemas for data sharing and opening. Support the acknowledgement of citizen scientists' data and encourage their provision and sharing. Support the maintenance of open data infrastructure and their interoperability degree. Support the co-design and co-development of Apps for data gathering, sharing and managing that are truly adopted by the citizen scientists.
- Boost the European Open Science Cloud
  - Support the establishment of an open cloud data space for CS data at EU level. Support the development of AI and ML tools for mining and interpreting CS data available in open cloud infrastructures.

Interim policy recommendations/4

- Boosting skills on citizen science
  - Develop career pathways for scientists interested in CS initiatives. Include CS topics in university curricula. Foreseen governance models of CS initiatives which are in line with the rules and regulation of the research organization in charge of the CS initiative
- Support funding
  - Establish appropriate funding mechanisms, for instance including agile evaluation of CS programs and citizen observatories. Facilitate the connection to alternative funding opportunities suitable to specific CS projects' domains. Align regional, national, and EU funding for CS on specific science and policy domains.
- Involve policymakers throughout the project life cycle
  - Seek to engage with CS projects throughout their life-cycle to ensure that CS projects' outcomes are aligned with science and innovation policy. Develop programs to guide research organizations in the creation of CS projects that are in line with mission-based innovation. Establish or use existing frameworks to ensure that CS projects are iteratively designed and evaluated against mission-based innovation objectives.

Interim policy recommendations/5

- Continuing to pursue and encourage diversity
  - Encourage and support the development, collection, use, and dissemination of guidelines and good practices on inclusive CS. Support knowledge sharing initiatives on inclusive CS, for instance by partnering with stakeholders seeking to pursue this goal in the organization of events
- Foster experience design to ensure motivation, sustained engagement, and inclusivity
  - Support the development of training for CS experience design. Liaise communities of practice to foster knowledge exchange between the CS and the designers communities. Provide support for capability building on CS experience design, for instance allocating fundings for specific initiatives in this field.
- Meta-evaluation
  - Foster the development of initiatives that create or enhance a continuous improvement culture among CS stakeholders. Support initiatives for the meta-evaluation of CS impact assessment frameworks and tools. Ensure that the fitness-for-purpose criteria for CS impact assessment frameworks and tools include elements regarding social innovation and other relevant policies.

T10.4. REINFORCE Sustainability & Exploitation Path (M18-M36)

Analysis of the market: to identify potential end-users and possible competitors in the field

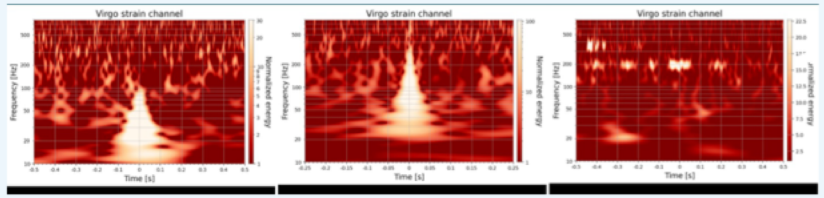
Defining the exploitation assets: what project results can be exploited once funding has concluded

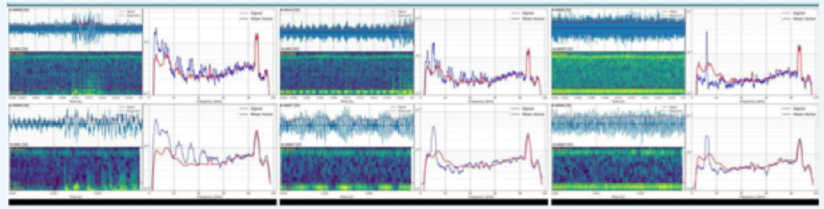
Exploitation plan and activities: including potential business models and revenues from citizen science activities, data privacy and security issues

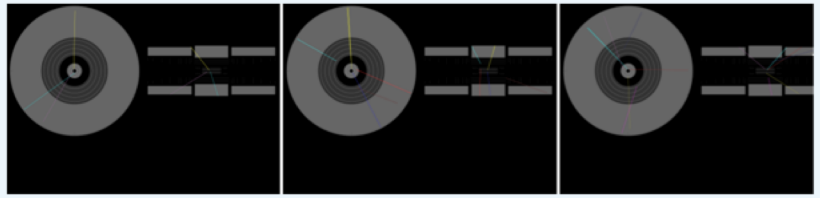
Sustainability plan: for REINFORCE to evolve into a sustainable think tank, developing services for encouraging uptake of citizen science by policy-makers and practitioners

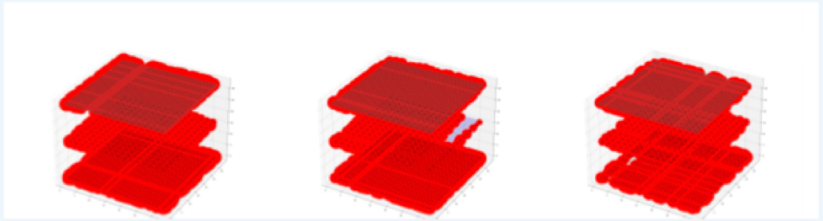
T10.4. REINFORCE Sustainability & Exploitation Path (M18-M36)

The exploitation assets:



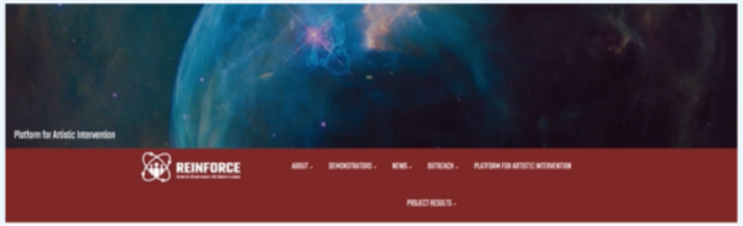






Increasing Level of Engagement & Participation Of Citizen Scientists In CS Projects

Level	Inform	Consult	Involve	Collaborate	Empower
Citizens Engagement Level	Citizens are being informed about the research needs, intentions, goals, and foreseen activities. They will understand how they can assist researchers to achieve them.	Citizens can provide feedback, share their initial ideas, or concerns on the citizen science project design and activities. They will express their own interests and motivations.	Citizens work with scientists to ensure that their needs, ideas, concerns, and aspirations are consistently understood and integrated in the project design and activities.	Citizens implement and contribute to the CS project. They are keeping direct contact and discuss observations directly with researchers and other citizen scientists.	Citizens are being assisted by scientists in making use of the CS activities to inform others, train citizens in scientific skills, or in conducting their own research.
Researchers Obligations	Researchers inform the general public. Various target groups will be contacted and informed separately and according to their perceived interests.	Researchers start a dialogue, acknowledge the shared ideas and concerns, needs and motivations of citizens. They explain the benefits of becoming involved and what contributions citizen scientists can make to the research work	Researchers ensure that citizens ideas, concerns, motivations are directly reflected in the project design. They are providing feedback on how input influences CS project design and activities.	Researchers collect contributions and incorporate findings, observations, and comments into their research work. They provide ongoing feedback to the citizens and acknowledge their work.	Researchers provide resources, advice, and assistance to support citizens further utilize CS projects, to create new research-related activities, implement trainings, or conduct own research.



T10.4. REINFORCE Sustainability & Exploitation Path (M18-M36)

Other relevant sections:

- Innovation and exploitation activities: at the organisational and consortium level
- Lessons learned from the demonstrators
- Sustainability Plan: alignment with European priorities, business model canvas, financial plan, role of the REINFORCE partners

	Project drivers						
Comparable projects	Type of engagement	Usability	Measurability	Diffusion	Feedback	Recognition	Diversity
Gravity Spy	Collaborative	High	High	High	Medium	Medium	Medium
Planet Four	Collaborative	High	High	High	Low	Low	Low
SuperWASP: Black Hole Hunters	Collaborative	High	High	High	High	High	Low
Galaxy Zoo	Collaborative	High	High	High	High	High	N/A
Planet Hunters	Collaborative	High	High	High	Medium	Medium	Medium
Disk Detective	Collaborative	Medium	Medium	High	Medium	High	High
Dark Energy Explorers	Collaborative	High	Medium	Medium	Medium	Low	N/A
Citizen ASAS-SN	Collaborative	High	High	Medium	Medium	Medium	N/A
AI4Mars	Collaborative	High	Medium	High	Medium	Low	Medium
Aurora Zoo	Collaborative	High	High	High	High	Medium	N/A
Star Notes	Collaborative	Medium	Medium	Medium	Low	Low	Medium
Zwicky's Quirky Transients	Collaborative	High	Medium	Low	Medium	Low	N/A
SuperWASP Variable Stars	Collaborative	High	Medium	High	Medium	Medium	Medium
American Association of Variable Star Observers (AAVSO)	Collaborative	Medium	High	Medium	Medium	High	High
Einstein@Home	Contributory	High	High	Medium	N/A	High	High
LHC@Home	Contributory	High	High	Medium	N/A	Medium	High
Backyard Worlds: Planet 9	Collaborative	High	High	High	Medium	High	Medium
MilkyWay@Home	Contributory	High	High	Medium	N/A	Medium	High
Stardust@Home	Collaborative	High	High	Medium	N/A	High	High
Unistellar Network	Contributory	Low	High	Medium	Medium	High	Low
Astronomy Rewind	Collaborative	High	High	Medium	Medium	Medium	N/A

The competitive analysis, drawing on projects meeting the following criteria:

- Astrophysics/frontier physics projects
- Citizen science
- Research infrastructures
- Still running (as at March-May 2022)

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Next steps

- Light revamp of the website layout
- Final factsheet posters with last outcomes results
- Sustainability and exploitation plan release
- Roadmapping release

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