

# Science Communication Plan of the COST Action HARMONIA CA21119

## VERSIONS AND HISTORY OF CHANGES

Version	Date of adoption by MC	Notes (e.g. changes from previous versions)	Lead author(s)*
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*\* The Science Communication plan is developed, updated and its implementation monitored under the overall supervision of the Science Communication Coordinator, and in close collaboration with other relevant contributors.*

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## 1. SUMMARY

The objective of "HARMONIA" action is to establish a network involving institutions, instrument developers, scientific and commercial end users, in order to improve and homogenize aerosol retrievals using mainly solar and sky but also lunar and star photometers from different networks. It aims bridging needs and the science and technology expertise residing in academia and industry. The first aim of the action is the homogenization of existing aerosol optical properties instrument networks through establishing a network of experts, which should be active and well informed of the innovations in the related disciplines. This network should also suggest improvements on solar lunar and star photometry based on the collective experience, hence the interaction between the experts should multiply through various channels of communication. Also, there is the aim of stimulating the communication between operational agencies and academia in order to increase the applicability of the photometry based aerosol. This communication should also be a trigger for innovations in aerosol measurement technologies. Finally, we should stress the importance of the Action's results to the general public, for what deals with the broader context of understanding and adapting to climate change, monitoring the urban air quality and implementing solar energy applications.

The science communication coordinator (SCC)'s role in the HARMONIA Cost Action covered developing and maintaining the website, social media channels, promotional material and newsletter. SCC will be responsible for producing media content for the Action, including videos, posters, leaflets, infographics. Additionally, press releases will be made about innovations and raising general public awareness about the targets of the action.

## 2. GENERAL AIM AND TARGET AUDIENCES

The core aim of the communication and valorization of the action results are:

- Provide a precise vision of the progresses achieved by the Action and an overview of the outputs associated with the Action deliverables, for the scientific community.
- Provide end-users with tools to exploit a homogenized data set of aerosol properties.
  - Aiming engagement of the specific scientific community in the most recent innovations.
  - Involvement of industry and manufacturers in the directions of homogenizing procedures and protocols
  - Access to new generation of scientists that should be trained and push forward the innovations and broaden the network of people working on aerosol remote sensing.
  - Government bodies and policymakers should be familiar with the findings of the action and take into account when adapting financial and social agendas.
  - Raise awareness of the General audience, of the importance of aerosol monitoring for climate, energy, health and aviation.

The main objectives that we envision to achieve the specified aims of the communication plan are:

- Identify all the different audiences of the Action's results and provide specific approaches to communicate and involve them
- Produce content accordingly for each audience, from the specific scientific community to the general audience.
- Create visual recognition for the action (logo, templates, website, media)
- Monitor the impact of the communication of the strategy and replan accordingly during the action

For the specified audiences, we can list the key messages to be delivered using the science communication plan and activities.

Key message for the scientific audience

- Homogenization of measurement protocols will provide everybody the opportunity to easily access and process a significantly wider data set.
- The network is the primary tool for developing collaboration.
- The collaboration will produce relevant results that will be beneficial for all partners.
- Information can be distributed through the network and reach stakeholders and end users utilizing the communication tools developed

#### Key message for the non-scientific audience

- Aerosol optical properties are still relatively poorly understood, resulting in one of the largest sources of uncertainty in studies related to atmospheric warming/cooling and affecting estimates and interpretations of the Earth's climate.
- Very accurate monitoring of aerosol optical properties is vital for understanding physical and chemical interactions in the atmosphere.
- Aerosol trends affect incoming solar irradiance, causing dimming/brightening periods which are crucial for both climate modelling and solar energy planning.
- Ground based, satellite measurements and model outputs should be combined and monitored in order to achieve all of the above.
- Natural events like dust storms or volcanic eruptions have severe consequences in human's activities, including health , energy and aviation sectors.
- Anthropogenic aerosols are of high interest, since their emissions are defining ambient conditions in urban areas, specially in megacities.

All researchers have their own independent responsibility to communicate with their own peers. In the same way, also project partners have their own responsibility to communicate, besides their own contribution to the project, also its main goal and objectives. The communication plan provides means to organize the dissemination to other peers and the spread of knowledge to wider audiences.

### **3. PLAN FOR THE COMMUNICATION OF ACTION RESULTS**

## 1) WEBSITE

The action's website ([www.harmonia-cost.eu](http://www.harmonia-cost.eu)) is the main hub of communication between the action and the public. The main areas of the site are

- Introduction “what is HARMONIA”, where the main objectives of the project are briefly described
- Working groups, their objectives and aims.
- News, where information about activities of the action are posted. Also, new material on other sections (grants, videos, publications) is advertised here. Finally, an agenda of future relevant events(workshops, meetings, conferences) is included.
- People (MC, Core group)
- Grants, this is the area where the calls for STSM, VSTSM and ITC conferences are published as long as the results of the missions.
- Resources, is the area where Publications and deliverables will be archived
- Media Is the area where media material of the action will be published video section will hold links of all the videos created in the framework of the actions. Webinars will be the section with educational videos from seminars and schools that will be held by the action  
Image gallery, will have of material from action's events.

A Twitter feed will link the website with the most updated posts at the social media platform.

Additionally, email accounts on the same server are created, for the main positions of the action's administration, in order to avoid using personal ones.

Releasing online the website was the first milestone of the communication plan of the action and it was achieved on 20 December 2022.

## 2) Social Media presence

The action has created accounts in Facebook (<https://www.facebook.com/harmoniacost>), twitter(@HARMONIA\_COST) and linkedin(HARMONIA COST - CA21119) , acknowledging the diverse audiences of each platform and setting different targets on each's activity.

**Facebook** will be used to increase the action's visibility among the general public and more specifically among scientists and young researchers/students. Facebook is the most popular social media among the action's members, which creates a starting base of followers with prospective of reaching almost all active persons in this discipline, globally. Specific material for this audience will be created and posted only at Facebook. Aim is to have more than 100 people reach at each post, which could be achieved when having more than 200 followers.

**Twitter** posts will be more aimed to industry, policy makers, governing bodies and international organizations. Posts at twitter will be closer to press releases and will also aim specific journalists and mass media in order to raise the awareness of the action. Aim is to interact with organizations and traditional media platforms. In order to achieve we aim of having at least 150 followers.

Infographics of the results of the action will be created for both facebook and twitter feeds.

Finally, **LinkedIn** is a platform oriented at business/employment matters. HARMONIA presence at this platform will be focused to gain links with the industry and provide

opportunities to young scientists. Jobs announcements will be posted at this stream, to build a community in this platform.

A **youtube** account will be setup that will include all video material of the action. Two separate playlist will be created; the first one will contain all the webinars and educational material from schools etc ; the second one will contain outreach videos to the general public.

QR codes for all social media platforms have been created in order to drive easily traffic to them through other material (presentations/posters etc).

Reaching the desired milestones for each social media will be the milestones at this category.

### **3)Newsletter**

The action's newsletter will be the main tool to engage the specific scientific community and will be sharing news of the action as long as innovations that are in the interest of this audience. The platform Sendinblue will be used, and the free of charge subscription. This selection was based on the GDPR compliance of this company and the effectiveness and cost of the subscription. Primary plan is to have at least 5-6 newsletter per year. A qr code for subscribing to the newsletter has been created, in order to be easy to engage people in conferences and presentations. Already, there are 120 active subscribers to the newsletter and we hope to achieve broader audience in the upcoming months.

### **4)Logo**

Action's Logo was designed by a team of graphic designers and represents the atmospheric particles that are the subject of the action; the golden ratio that implies structures that scientists are left to discover; the musical Harmony, which is the abbreviation of the action. Also, the different color of each cycle, represents the uniqueness of the particles. The logo was voted among three ideas, by the core group and gain a very clear absolute majority.

### **5)Videos**

Four longer videos will be created during the lifetime of the action – one per year.

**Video #1** will be an introduction to the action, where the basic targets will be explained and people would be inspired to follow the action. This video will be targeting mainly the engagement of the scientific community and the industry to the action. Approx. 3-5minutes

**Video #2** Will be an animation explaining the basics of sun photometry and the challenges of the action, through animation. This will be aiming mainly young scientists and university students and could be also used as educational material. Approx. 5minutes

**Video #3** will be an animation explaining in plain word, the importance of sunphotometry and the implications of aerosol properties in other disciplines as air quality, climate change and energy sector. This video will aim the general public and raising awareness of the action.

**Video #4** will be near the end of the action and will summarize the achievements of HARMONIA and possibilities for future works. The main target audience for this video will be end users of HARMONIA related products, industry and international organizations.

Additionally, some short videos (~30 seconds) will be created, each one explaining one physical quantity or phenomena that largely affects the science behind HARMONIA (Eg AOD, SSA, AE, Air Mass etc).

Releasing each video will be a milestone for the communication plan. Each of the longest videos will be expected at September of each year of the action. The possibility of editing parts of all videos to a longer version will be examined near the end of the action.

#### 6) Promotional Material

In order to increase the visibility of the action during the schools, trainings, meetings and conferences, some promotional material will be printed (tote bags, pens, notebook and envelope folder). These materials will establish to the visual identity of the action and to be memorized by the interested audience.

7) **press releases** will be written regularly to promote main achievements innovations and scientific findings of the actions by a team from the Core group. The press releases will be written in de-jargonised language in order to be accessible by the general public. According to the interest of each release, possible translations in other languages will be created.

## 4. PLAN FOR THE DISSEMINATION OF ACTION RESULTS

Dissemination deals with making Action knowledge and results public towards its target audiences, who could benefit and use them. The information is conveyed in a language that is customised to the specific target audience (e.g. scientific publication for researchers).

The Action approach to Open Science and Open Access (e.g., openness, accessibility, adherence to FAIR principles, IPR) is covered in this section in relation to its application to Action activities, (expected) results and outputs.

This section describes the planned dissemination products to be developed, their tentative timeline and the expected contribution from Action participants (e.g. which Working Groups will work on a planned special issue). Relevant target events or conferences, scientific journals or other forums (e.g. related projects/initiatives) where to disseminate the Action results should be identified and described. Links between the plan and any Action deliverable related to dissemination listed on e-COST should be explained.

Sessions dedicated to aerosol remote sensing and the contribution of HARMONIA will be organized at major international conferences to be held during the time span of the Action, such as the European Meteorological Society annual meeting (from 2023 to 2026), the International radiation Symposium (2024). The summary of the aims and results of HARMONIA will be presented at

conferences serving larger scientific communities having overlaps with the Action, for example the annual European Geophysical Union (EGU) General Assembly and the biannual conference CIMO-TECO 2022 and 2024

International experts from other continents will be invited to each MC meeting.

: Stakeholders from the climate, health and renewable energy sectors will be sought at the beginning of the Action, through a workshop dedicated to the definition of user requirements. Their participation will be encouraged throughout the HARMONIA action, informing them about the action's progress, achievements and their potential values and benefits.

Summer schools for young researchers will be organized by the action. A WMO-GAWTEC related aerosol session will be organized.

## 5. PLAN FOR THE VALORISATION OF ACTION RESULTS

The VALORISATION plan for the HARMONIA project aims on establishing a core network of scientists and users that will continue their collaboration after the end of Harmonia through networking schemes that will be defined through the Harmonia lifetime. The scheme and philosophy (pure science, application, dissemination, all) will be defined based on the level of success of the harmonia objectives. An possible way to achieve this is also based on the success of Harmonia aims, linking the network with international organizations and research infrastructures (WMO, ACTRIS, aerosol networks, calibration centers).The plan involves utilizing the project's results and findings to drive future developments in sunphotometry, climate, and energy research. Results of the action will be steady base for future developments in sunphotometry. This includes future innovations from manufacturers and changes in both hardware and software. A new standardization of the processes and uniformity of future databases are expected to be a powerful evolution for future research in climate and energy sectors. New research directions , by employing the acquired expertise during HARMONIA and in challenging environments and also in other areas, specially in ITCs and NCC's. Connections between scientists, industry and modelers create a new interdisciplinary community that should push forward for more useful measurements and model parametrizations.

Furthermore, there is potential for valorization of the outcomes in other sectors, not forseen in the period of the action. For example, commercial use of AOD datasets, could include optimization of crop yields in the agricultural sector, while the insurance sector could use these datasets to assess and manage risks related to climate change. The project's results could be shared with various innovation ecosystems, such as EU-funded startups and incubators, to promote further research and development or even the evolution of the network for further scientific collaboration. Such collaborations could facilitate the sharing of knowledge, expertise, and resources, ultimately leading to more significant advancements in sunphotometry, climate, and energy research. Civil society organizations could also use the results to create awareness and advocate for sustainable development practices. HARMONIA's findings could be used by industry players to

improve their environmental sustainability practices and meet regulatory requirements. The project's results could also inspire new product developments and innovations, such as energy-efficient systems.

Dissemination and communication strategy described are complimentary creating a space that all involved stakeholders will participate and potentially stay active after the action. This community will be a yeast for the future aerosol research and monitoring.