

Science Communication Plan of the COST Action CA22130 - COMETA

Each Action MC shall adopt a Science Communication Plan including a communication, dissemination, and valorisation strategy, as well as a plan to implement this strategy. The Science Communication Plan shall reflect the MoU in particular connecting to the aims and objectives of the Action. It is recommended that the Science Communication Plan is approved by the Management Committee not later than 6 months after the start date of the Action. It is recommended that the Science Communication Plan, including progress on implementation, is discussed on a yearly basis by the Action MC and reviewed or amended where necessary. (*Annotated Rules for COST Actions, article 5*)

This template is provided to COST Actions as a support for developing the Action Science Communication plan. Actions can adapt the plan structure and content according to their needs.

VERSIONS AND HISTORY OF CHANGES

Version	Date of adoption by MC	Notes (e.g. changes from previous versions)	Lead author(s)*
v1.2			Kārlis Dreimanis, Flavia de Almeida Dias, Richard Ruiz

** 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.*

This document is based upon work from COST Action COMETA, CA22130, supported by COST (European Cooperation in Science and Technology).

COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.

1. SUMMARY

Summary description of the aim, key aspects and implementation plans concerning the overall Action strategy for communicating, disseminating, and valorising the Action results.

This section also describes how the responsibilities have been organised within the Action, in particular in relation to the role of the Science Communication Coordinator and involvement by other Action participants (e.g. implementing a Science Communication team, and/or WG devoted to it).

In 2012, ATLAS and CMS collaborations, based at CERN and using data from the Large Hadron Collider (LHC), announced the discovery of the long-sought-after Higgs boson, thus completing the Standard Model of particle physics from the particle content point of view. This discovery served to confirm the “Higgs mechanism” as an appropriate description of the process of electroweak symmetry breaking (EWSB). Continued, coordinated efforts to study EWSB, from both the theoretical and experimental sides, are paramount to fully understand the particle-field nature of our Universe described by the Standard Model, as well as to seek further physics that are expected to lie beyond the Standard Model. The aim of COMETA is to mobilise and organise the scientific community, both on the theory and the experimental side, for the study of the multi-boson production processes, in order to seek a more precise description of EWSB of the Standard Model, as well as to look for signatures of new physics in this sector.

High-energy particle physics, especially its experimental side, requires large-scale investment into research infrastructure, such as the current high-luminosity LHC (HL-LHC) upgrade and the Future Circular Collider (FCC) project, which can only be achieved via multinational funding approaches and scientific cooperation. This, in turn, requires that the scientific work and results are disseminated and communicated to as wide an audience as possible.

This document is set to outline the scientific communication and dissemination strategy of COMETA. The Action itself aims to demonstrate the scientific merit of the study of multi-boson production processes and to promote the field of particle physics within the wider communities of various stakeholders, from the policy makers to the wider public in general.

The main tool for the scientific dissemination of the research results and outcomes of COMETA will be the publication of the Action’s results in top-tier, peer-reviewed journals. Specifically, the action aims to direct its publications to the *Journal of High Energy Physics (JHEP)*, *European Physics Journal C (EPJC)*, among several others, which are “Q1 ranked,” carry the highest impact factors, are well-regarded within high-energy physics, and are covered under open access agreements. In addition, all publications credited to COMETA will be made available on open-access preprint repositories, such as the *ArXiv*, where an assignment of a unique pre-print identifier, taking the form of COMETA-YEAR-NN, linking the publication to the Action will be used.

The public communication of the Action will revolve around two main pillars. The first will be an active online presence of COMETA on various platforms, such as *X* (formerly known as *Twitter*) via the handle *@multibosons* and hash-tags *#COMETA* and *#Multiboson* and the *YouTube* video platform via the channel handle *@multibosons*. Care will be taken to link any posts on the aforementioned platforms to the official website of COMETA (<https://cometa.web.cern.ch/>), where appropriate. An example of such activity would be the encouragement of participants of scientific mobility supported by the Action, to create social media presence (posts) crediting and promoting COMETA for its role in the provision of such opportunities. The second pillar will be targeted *in-situ* outreach events, accompanying all COMETA-organised activities. These will include events such as open discussion and Q&A panels at the research institutions where a given COMETA event is taking place, as well as promotional activities available to the broader public, e.g. so-called *Pub quizzes* on COMETA-relevant topics.

This COST Action has five working groups (WGs) dedicated to their respective tasks, led by two or three WG leaders, designated as the WG *leader* and *co-leader(s)*. The WG responsible for the dissemination and outreach activities is WG5 - "*Inclusiveness and outreach*". Additional organisational leadership regarding the scientific dissemination and communication will be offered by the Action's *Science Communication Coordinator*. The aforementioned individuals, together with the Action Chair and Vice-Chair and the members of the WG5, will work towards implementing the science communication plan outlined below.

2. GENERAL AIM AND TARGET AUDIENCES

Description of the aim and specific objectives related to the communication, dissemination and valorisation of Action results.

Taking into account the nature of the Action challenge, its objectives and deliverables, this section identifies the target audiences specific to the activities of communication, dissemination and valorisation of Action results. In doing that, the plan describes the general lines to reach and, whenever necessary, engage them online or in physical or hybrid events.

A comprehensive communication plan should define clear objectives with key messages addressed to relevant target audiences and set out a description and timing for each activity. This will help to create communication strategies that can be adapted to each identified target audience. By calling the attention of various audiences, the visibility of the Action and its results are multiplied and can be understood also by non-specialists

The main aim to be achieved through COMETA's communication activities is promoting the importance and relevance of (a) multi-boson physics in particular and (b) particle physics research in general to various target audiences. The specific objectives, therefore, are:

- to continuously inform the various target audiences of the scientific objectives and research outcomes of the Action, as well as their scientific relevance and importance;
- to aid in defragmenting the existing scientific groups and research efforts working on the scientific topics relevant to the Action, creating a cohesive and collaborative network of researchers;
- to engage future researchers at an early stage (undergraduate and high school students) in order to foster interests in scientific vocations and to support interests in a research career in the scientific topics of this Action;
- to demonstrate the benefits of the scientific topics of the Action to a wider public, including the creation of transferable-to-industry skills, tools and knowledge.

The communication strategy includes the following key target audiences: colleagues already working in the field of particle physics; potential future researchers, such as undergraduate and high school students; the general public and policy makers.

Colleagues working in the field of particle physics: Dissemination within the existing scientific community working on COMETA-related topics is to be performed, predominantly, through the efforts of the current Action members at any given time. Each of the three scientific WGs of COMETA are tasked with compiling a list of researchers working on COMETA-related topics and to reach out to them individually to engage with them in bilateral research activities, to invite them to share their research outcomes and knowhow in COMETA-organised events, and to invite them to consider joining the Action outright. The aforementioned COMETA-organised events will include, for example, the Yearly Workshops (YWs) and WG meetings. These will be used to share the current state-of-the-art and latest scientific results in COMETA-related topics amongst the COMETA members, as well as an opportunity to invite colleagues not participating in COMETA to share their results. This should allow for an improved cohesion of the scientific community, both from the theory and the experimental side, and aid in the defragmenting of said community of researchers. In addition to direct networking and communication, COMETA will utilise standard tools, such as the Action's website and a monthly Newsletter, to keep the scientific community up-to-date with the Action's activities and its scientific

output. In addition, COMETA will hold online colloquia. These will target the colleagues working in the field of particle physics, but shall also be open to the broader public. Action expects these events to be livestreamed on the YouTube channel of COMETA. In cases where this is not possible, a video recording of the event shall be uploaded on this channel.

Undergraduate and high school students: Similar to the engagement of the existing colleagues in the field, Action members will be encouraged to actively promote the research topics of COMETA to undergraduate students at their home institutions. In the case of COMETA, the most relevant undergraduates include students of mathematics, physics, engineering and computer science, who would be potentially interested and able to contribute to the future of multi-boson physics research and software development. Besides direct engagement by the Action's members at their home institutions, this group will be further targeted in COMETA's outreach events accompanying any major COMETA event, such as YWs, working group meetings, and training schools. These events will include panel discussion and Q&A sessions organised at the location of the Action's concurrent activity, often taking place on the campus of a given higher education institution. Important messages to be conveyed in such outreach events are the current relevance of particle physics, especially the investigation of electroweak symmetry breaking via multi-boson studies, and the future prospects of the field. Messaging around the planned future machines for high-energy physics experiments, such as the Future Circular Collider program, is of particular importance, given that construction of this machine would guarantee access to the cutting edge experimental infrastructure until at least 2095.

In addition to STEM undergraduates, the Action will aim to promote itself in outreach and educational events targeting high school students. Here a more popular-science approach is to be utilised, focusing more on short and entertaining lectures pertaining to the specific scientific topics of the Action and particle physics research in general. This also includes COMETA's participation on social media and engagement with the broader, non-scientific public.

General public: In addition to the direct person-to-person engagement performed naturally by the researchers involved in the Action, engagement with the general public will take place via two main avenues: (i) online social media presence of the Action, including its website, and (ii) the aforementioned outreach events organised adjacent to the Action's activities, such as the YWs, working group meetings and training schools. The day-to-day engagement will be performed via the *X* (formerly known as *Twitter*) account (@multibosons, #multiboson, #COMETA) and the *YouTube* channel of the action (@multibosons). These social media activities will be cross-linked, as well as linked to the website of the Action. The main aim of this mode of engagement is to promote and advertise the excellent scientific research performed by the researchers gathered under the COMETA umbrella and to demonstrate the importance and relevance of this *blue-skies* research. Additionally, where applicable, this communication strategy will serve to demonstrate to the general public the direct benefit of high energy physics research to the wider community. The expected demonstrable benefits will include developments of state-of-the-art computing tools and machine learning (ML) algorithms, which could be later applied in other fields of science, medicine, finance, as well as in industry. These will also include the promotion of the invaluable professional training provided by the field particle physics, spanning from data analysis skills to the soft skills, such as public speaking and presentation skills. The second avenue of using outreach events will be used to engage members of the public more directly via activities such as Q&A sessions and *PubQuizzes* accompanying COMETA events and meetings. In all communication targeting the general public, including in relation to the Action's website, care will be taken to ensure that the language used is approachable, understandable and engaging for as broad an audience as possible.

Policy makers: Engagement with policy makers will be done as an extension of the engagement with other target audiences. Social media accounts, the website, and outreach events of the Action will be used to engage with all of COMETA's target audiences, with the quantifiable engagement (number of participants at events, re-tweets, unique website hits) monitored. Such analytics will be used by the individuals of COMETA's MC as deemed necessary when promoting particle physics and, in particular, multi-boson physics research, to policy makers of various levels in their home countries. Additionally, the scientific successes of COMETA will be used, if deemed appropriate, to engage with the governing bodies of multi-national laboratories, such as CERN, to provide input to their decision making regarding the future colliders and experiments for high-energy particle physics. Additionally, the networking and training successes of COMETA will be used to demonstrate the usefulness of COST Actions as invaluable tools for scientific community building in the European research ecosystem. The main aim of engagement with this target audience is to ensure that policy makers at all levels understand the importance and relevance of *blue-skies* research, not only for its scientific merit, but for the merit of education and training of young professionals.

In all of the communication and outreach activities discussed, the Action's website will be clearly promoted, allowing for the interested parties to access COMETA's monthly newsletter, summaries of research output, and the list of upcoming events. Importantly, the website will also allow any interested parties to reach out to the chair and vice-chair of the Action, as well as the leaders and co-leaders of the WG that interests them the most, as the contact details (email) for these individuals, will be easily accessible on the COMETA website.

3. PLAN FOR THE COMMUNICATION OF ACTION RESULTS

Template: Communication deals with raising awareness and promoting the Action and its results towards the general public and end-users, civil society and mass media. Hence, the information is conveyed in a language that is widely accessible. It is helpful to define key messages associated to the Action aim, approach, (expected) results and impact.

This section covers the suitable communication tools/channels to be used for communication purposes (e.g., Action website, social media, press releases, infographics), as well as the products to be developed for communication purposes (e.g., Action logo and visual identity, templates, leaflet, videos/animations, podcasts).

A tentative timeline including for the development, production and use of communication tools/channels, and communication products should be included in this section as well. Links between the plan and any Action deliverable related to communication listed on e-COST should be explained.

As discussed in the previous section, the communication and engagement activities of COMETA are aimed at four target audiences, which can be alternatively categorised into three broader and complementary audience levels: (i) the scientific (expert) community in which COMETA is embedded, i.e., the experimental and theoretical high-energy physics community; (ii) the broader scientific (non-expert) community, including those in other subfields of physics as well as non-physicists; and (iii) the general public, which ranges from school children to policy makers. In the following, we label these three audience levels as “Experts,” “Non-experts,” and “General Public”, respectively.

For several of the chief activities and outputs of the Action, we now give specific details on our communication and dissemination plan:

- **Scientific manuscripts and publications (dissemination):** scientific manuscripts and publications are aimed at the Expert community. As described in the following section, completed manuscripts are uploaded to the public and open-access preprint server *arXiv* before submission for peer-review. This ensures that all manuscripts from COMETA are publicly and freely available. New submissions to the *arXiv* are then announced daily (on business days) on the website <https://arxiv.org/> and in weekly email digests to subscribers. Daily submissions are also promoted on social media platforms by unaffiliated automated tools, e.g., <https://twitter.com/HEPPhenoPapers>, which is linked with *arXiv*'s Application Programming Interface (API). COMETA research can be identified on the *arXiv* via a unique report number that follows the pattern COMETA-YEAR-NN; e.g. COMETA-2024-01 denotes the first (NN=01) manuscript submitted to the *arXiv* in the calendar year 2024. Report numbers can be obtained from COMETA members by contacting the conveners of WG5 or the head of COMETA's Science Communication (*SciComm*) team. A full list of COMETA publications is maintained as a shared

spreadsheet by the Action's leadership; it is updated when members request new report numbers. As of February 2024, five COMETA manuscripts are available on the *arXiv*:

- a. COMETA-2023-01: <https://arxiv.org/abs/2311.16031>;
 - b. COMETA-2023-02: <https://arxiv.org/abs/2312.00420>;
 - c. COMETA-2023-03: <https://arxiv.org/abs/2310.07499>;
 - d. COMETA-2023-04: <https://arxiv.org/abs/2312.13082>;
 - e. COMETA-2024-01: <https://arxiv.org/abs/2401.17365>.
- **COMETA websites (public; communication):** in late 2023, the official COMETA website went online and is accessible via the URL: <https://cometa.web.cern.ch/>. The site serves as a focal point of the communication activities for the Action members as well as Experts, Non-experts, and the General Public. Presently, the site is hosted on CERN's web platform services, which provides a long-term (permanent) home at no direct cost to the Action. The website is expected to remain accessible well after the conclusion of the Action. At present the website consists of the following informational sections and is updated on a rolling basis by members of WG5 and the *SciComm* team:
 - a. **Home**, which includes a microblog of major COMETA activities, e.g., kick-off meetings and newsletters;
 - b. **About & Contacts**, which provides a brief overview of the Action in a language suitable for the General Public;
 - c. **Events**, which lists workshops, meetings, training schools, and training sessions hosted, organised or supported by COMETA;
 - d. **STSM**, which provides details for COMETA members on applications for the Short-Term Scientific Missions (STSMs) and Inclusiveness Target Country (ITC) conference grants;
 - e. **Outreach**, which lists past, on-going, and planned future outreach activities and events;
 - f. **Publications**, which lists COMETA manuscripts that have been submitted to the *arXiv*;
 - g. **Working Groups**, which provides a brief summary of the goals, tasks, and activities of each working group.
 - **COMETA website (internal; communication and dissemination):** COMETA operates a second, informational website (a Twiki) publicly accessible via the URL: <https://foswiki.web.cern.ch/COMETA/WebHome>. This site contains more specialised information, useful for the members of the Action as well as Experts that are not part of the Action. The Twiki contains technical details on, for example, how to request a publication report number or registration details for an upcoming COMETA working group meeting. The Twiki is publicly accessible to provide the Experts that are not part of the Action a means to communicate and coordinate with the Action. At the same time, the Twiki also provides access to internal documents, which are accessible only to relevant groups within the Action, e.g., the Core Group, the Management Committee, and the Grant Evaluation Committee.
 - **COMETA mattermost channel and WG emailing lists.** The Action has a dedicated mattermost channel (<https://mattermost.web.cern.ch/cometa/>) hosted on the CERN mattermost server. This channel is used for quick communication of interesting events and news, as well as for general cross-working-group and cross-institutional networking. Additionally, each WG has a dedicated emailing list, also housed on the servers based at CERN. These take the form of cometa-wgX@cern.ch, where "X" stands for the number between 1 and 5. These lists are used for operatively communicating WG-specific information to everyone, who has joined the respective working group. These mailing lists are populated with new members on a continual

basis.

- **Newsletter (communication and dissemination):** the Action operates a monthly newsletter for its members containing up-to-date information regarding:
 - a) Recent COMETA publications;
 - b) Upcoming COMETA events;
 - c) Other events of interest, such as meetings and workshops that are of topical interest to COMETA members, but are not directly hosted, organised or supported by the Action;
 - d) Newly posted job openings topical to COMETA and/or opened by the members of the Action;
 - e) Advertisements and calls, e.g., solicitations for STSM applications.

The newsletter is sent out to all members of the Action via the contact email they have indicated when registering their interest in COMETA. The newsletter is also posted on the COMETA website, allowing for it to be accessed by all target audiences as a form of communication.

- **Social media (communication and dissemination):** the Action operates social media accounts under the handle/username @multibosons on X (formerly known as *Twitter*; additional hashtags #COMETA and #Multiboson) (accessible via: <https://twitter.com/multibosons>) and on *YouTube* (accessible via: <https://www.youtube.com/@multibosons>) with aspirations to expand to other channels. The accounts are maintained by the leadership of WG5 and *SciComm*. The intended primary audience of social media activity is the General Public; however, it is expected that the social media activities also reach and impact the Non-expert and Expert audiences as well. For the period of 1 Oct 2023 - 31 Dec 2023, all six tweets from the *Twitter/X* account generated 1.3k “*impressions*”, while for 1 Jan 2024 - 14 Feb 2024, a total of 1.5k impressions were generated from 12 tweets. Besides the scheduled *Twitter/X* posts, released in coordination with the monthly newsletter, a preprint/publication release and as a promotion for the scheduled COMETA events, a more sporadic activity on the account is envisaged to maintain the engagement of the target audiences. Additionally, a tool is being developed by the *SciComm* team to automatically announce on *Twitter/X* the appearance of a new COMETA manuscript on the *arXiv*, with a targeted release of the tool scheduled for April 2024. The *YouTube* channel is intended to feature multilingual content promoting COMETA activities to the audiences in all countries represented by the COMETA MC. Multiple video series are currently envisaged with the initial video releases planned to be created and released during the 1st COMETA general meeting, taking place between the 28th of February and 1st of March, 2024, in İzmir, Türkiye. Where possible, videos released by COMETA will contain the subtitle option in order to increase inclusiveness level of the Action’s communication material. As far as achievable, an effort will be made to provide each video with native subtitles, however, where this will not be possible, e.g. live streams and/or recordings of the colloquia, the auto-generated subtitle option provided by the platform will be utilised.

The initial version (v1.0) of this communication plan is scheduled to be made available within 6 months of the commencement of the Action. Revised and improved versions of this document are expected to be made available on a yearly basis until the completion of the Action.

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.

Dissemination of the scientific results will focus predominantly on the Expert audience as defined in the previous section. However, some impact on the Non-expert and General Public audiences is also expected due to the open-access nature of dissemination activities.

The dissemination of the scientific outcomes of COMETA will rely mainly on three dissemination outlets: (i) publication of the scientific results in highly ranked, open-access journals (typically “Q1” and “Q2” ranked journals), (ii) networking events, such as Yearly Meetings and Working Group meetings, where said results will be disseminated in the form of talks and poster sessions, and (iii) the open availability of the code-bases created within the Action to all interested parties via the Action’s GitHub repository, accessible via <https://github.com/multibosons>, or similar repositories, such as Zenodo, which will be maintained by members of the Action. Additionally, the members of Action will be encouraged to seek out opportunities to present the research outcomes of COMETA in external conferences focusing both on physics topics within the Action’s scope as well as outside topics. This includes areas pertaining to collaboration, networking, and capacity-building in science. All scientific publications involving this Action will also be published in an open-access repository, such as *arXiv*, following FAIR principles (Findability, Accessibility, Interoperability, and Reuse). Where applicable, the addition of the following statements acknowledging this Action will be added to the appropriate section of both the preprints and the final publications:

“The author(s) would like to acknowledge the contribution of the COST Action CA22130.”

Networking events, such as Yearly Meetings, Working Group meetings, and Training Schools, as well as the outreach events expected to accompany these activities, will be used to disseminate the scientific outcomes of the Action to all three audience levels (Experts, non-Experts, and the General Public), retaining the main focus on the Expert audiences. Yearly Meetings especially will be used to share and discuss the most recent development in the field of particle physics, both resultant from this Action and otherwise. These networking events will be organised and timetabled using the *Indico* platform (category link: <https://indico.cern.ch/category/17113/>), which is developed by CERN, is widely utilised in the particle physics community, and imposes no additional financial costs on the Action. This will allow for all talks and posters shared during the networking events to be freely accessible to interested parties on a long-term basis, i.e., permanently. In conjunction with all events being promoted on the COMETA website, this will allow for easy and broad dissemination of said materials covering the research outcomes of this Action.

In addition to the aforementioned networking events, the promotion of the support of this Action is also expected to be sourced from the short-term scientific missions (STSMs), which, besides being an important tool for individuals performing their scientific research, can be used as a dissemination tool for COMETA. Any notable research outcomes of a given STSM will be disseminated via the Action website. Additional promotion of such activities via the appropriate dissemination channels of the given individuals research institution will also be highly encouraged. In all aforementioned cases, the following statement will be affixed:

"This work was supported by a STSM Grant from COST Action CA22130."

As stated in the previous section, at the time of the production of this document, five preprints acknowledging COMETA have already been produced and made available on *arXiv*. The Action's GitHub is expected to become populated with useful software tools developed within this Action in due course.

5. PLAN FOR THE VALORISATION OF ACTION RESULTS

Template: *Valorisation deals with the exploitation of Action results by specific target audiences, creating potential significant societal, economic or policy impact. As such, this section describes how the Action plans to support the envisaged scientific, technological and/or socio-economic impacts.*

To support this, this section may also highlight potential end users to reach out to during and after the lifetime of the Action, a mapping of (expected) Action results which may be relevant outside the strict scientific sphere and methods and formats to promote synergies between the Action and partners for valorisation.

Data protection and IPR issues, if relevant, should also be discussed within this section.

Links between the plan and any Action deliverable related to valorisation listed on e-COST should be explained.

COMETA employs several mechanisms whereby its research outputs can gain appreciation and impact, i.e., valorisation, by the Action's membership, greater network of high-energy physicists, and the general public.

- **In-network announcements of new results:** the COMETA membership is a broad network of theoretical and experimental physicists in high-energy physics, spread throughout Europe, with a wide variety of interests in different subtopics. The first level of valorisation is the internal and regular notification via electronic newsletters, Action-wide emailing list, and the Action's Mattermost channel, (<https://mattermost.web.cern.ch/cometa/>) of new results, e.g., COMETA publications that have been submitted to the *arXiv*. By undertaking these exercises, members of the Action can be introduced to new results by other members of the network, and naturally fellow members of the network are the most likely to appreciate the novelty and impact of new results.
- **Online WG meetings:** in order to introduce non-network results to the Action and the reverse (introducing network results to non-network members of the high-energy physics community), COMETA's Working Group leaders organise short, semi-regular meetings on dedicated topics. These meetings typically last 2-3 hours, consist of 4-6 talks from members and non-members of the Action, including those from other continents (North America, Asia), and take place online using the Zoom platform. As the Zoom licences are provided freely to the Action by CERN, there is no registration

fee and can support hundreds of participants. (In practice, participants number in the few-to-several dozen.) As of February 2024, three Working Group meetings have already taken place. Such exercises provide a second level of valorisation, namely valorisation by non-network members that participate in online meetings.

- **In-person network meetings:** high-energy physics is inherently a collaborative field. In-person discussions, both formal and informal, are integral to the field's development. Importantly, these meetings also involve the participation of non-network members of the high-energy community. Through the presentation of COMETA results, and crucially the subsequent organic and spontaneous discussions that follow such presentations, in-person network meetings provide a third level of valorisation. The first in-person meeting will be held in February 2024.
- **Training events and topical schools:** the transfer of specialty knowledge represents an important aspect of valorisation. As part of its broader program, COMETA will organise and/or cosponsor several training events and topical schools that are targeted for advanced PhD students and junior postdoctoral researchers. The agendas/lesson plans for these events/schools will be based on the scientific topics of the Action, including learning and using machine learning / artificial intelligence tools for data analysis in high energy physics. For junior members of COMETA that do not stay in academia, this provides a skill set that is highly valued by public and private employers.
- **Short-term exchanges and conference support:** the most valuable resource available to COMETA are its members, who range from the earliest of Early-Career Researchers to senior faculty / full professors. Likewise, among the most important results of COMETA is the broad knowledge and experiences its members develop during the Actions lifetime. To valorize exceptional work being done by collaborations within COMETA's network, the Action operates a budget for STSMs and conference travel grants. While the awards are principally merit-based, the Award Grant Committee considers whether participating researchers (i) are associated with Inclusiveness Target Countries (ITCs), (ii) are early career or established researchers, and (iii) belong to underrepresented communities. STSMs and conference participation also contribute to the transfer of (specialty) knowledge, which constitutes another aspect of valorisation.
- **Social media:** beyond the scientific community, the work and output of COMETA can be valorised by the general public through engagement on social media. Already, the Action operates a Twitter/X account (@multibosons) and a YouTube channel (@multibosons). This is also in addition to the social media accounts maintained by its members. The Action's social media accounts serve several functions. They facilitate introducing the general public to the Action, its activities, and its outputs. The social media channels also provide a means of introducing the public to the members of COMETA, i.e., show the public what real scientists are like.

ANNEX 1

The tables below are meant to provide an overview to the Action of relevant dimensions to be considered while structuring the Science Communication Plan. Table 1 highlights the different scope of Dissemination and Communication activities, while Table 2 underlines key questions to be addressed in each plan.

TABLE 1. COMMUNICATION – DISSEMINATION – VALORISATION

	COMMUNICATION	DISSEMINATION	VALORIZATION
Objectives	Promotion of the Action and its results. Raise awareness about the topic. Inform, promote and communicate – Visibility	Public disclosure about the Action results only.	Make concrete use of results for research, knowledge transfer or commercial use.
Expected Impact	Show the success of research collaboration. Engaging with society to show how it can benefit from the Action results.	Maximise result's impact. Allow researchers to go a step forward. Make Action results a common good.	For socio-economic purposes, further research, market validation, licensing, norms setting, standardisation. Represents society's direct & indirect return on the public sector's investment in research.
Audiences	Reaching multiple audiences from general public, citizens, civil society, and mass media	Groups that may use the results in their own work including peers, industry, stakeholders. Regarding policymakers, engage and share evidence-based results during the legislative process.	Not only researchers: incubators, venture capital, local, national or EU-related innovation ecosystems including policy-makers, industry, SMEs, sector of interest, civil society.
Languages	Non specialist language, layman – avoid jargon Be understandable.	Scientific and specialist language/jargon.	Combines both general and technical language to present reports, results, prototypes, software, data, etc.
Channels & Tools	Public debate, TV channels, radio, newspapers, websites, social media targeting general public. Leaflet/brochure, infographics, multimedia (podcast, webinars, videos)	Peer-review journals, scientific or stakeholder conferences, online repository of results, etc. Leaflet/brochure, infographics, multimedia (podcast, webinars, videos) EU related platforms and services such as Open	Stakeholder groups and events, industry publications/reports, competitions/awards. EU related platforms and services such as CORDIS, Horizon Results Booster, Innovation Radar, Horizon Results platform, European Patent Office.

		Research Europe, European Open Science Cloud.	
--	--	--	--