International Particle Physics Outreach Group

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New IPPOG Website Design and Development

Technical Specification

February 2019

Preface

IPPOG is embarking on an ambitious project to improve the user experience across the IPPOG digital portfolio (website and social media channels) and to strengthen the IPPOG brand online by creating a new website and a new branding for the Collaboration. The goal of the new design is to greatly broaden the audience type and usage of the web pages. The visual identity needs to be enhanced in order to pursue IPPPOG's mission and communicate its messages to its existing and new audiences, as well as new potential members, partners and sponsors. IPPOG wants the new website to become more open to students, teachers, and the general public, and for it to become the primary source of particle physics outreach material in the world.

IPPOG is seeking the web design and graphical development services to support this project of developing the new digital portfolio. As the current IPPOG website is hosted on CERN servers and CERN has been providing an in-kind contribution in the form of web support and Drupal infrastructure for several years, IPPOG also benefits from CERN's procurement service for conducting the tendering procedure in order to award the purchase order for the design and implementation of the new IPPOG website to the selected professional web design company.

The remainder of this document is identical to the Technical Specification document officially referenced with CERN Price Enquiry number DO-31960/EP_UAT, which has been written for this purpose following CERN 's procurement rules. It is also to be used for the follow up of more details in case of future evolution of the website, and as a basis for new tendering if needed. It serves as a reference should any technical issues with the contractor(s) arise.

The scope of this document goes beyond its purpose as a Technical Specification for bidding purposes: it serves as an active IPPOG record and it contains exhaustive information about the IPPOG collaboration and recommendations on how to develop the new IPPOG website including the new resource database having IPPOG's future vision in mind. The proposal presented here is a result of the IPPOG Web Working Group discussions over many years and numerous consultations with other science communication experts and IPPOG target audience representatives.

The following pages have been used for CERN Price Enquiry **DO-31960/EP_UAT** during the tendering process in February 2019 in order to award the purchase order for the design and implementation of the new IPPOG website to the professional web design company.

Technical Specification for New IPPOG Website Design and Development

Abstract

This Technical Specification concerns the supply of designing new IPPOG website including its implementation using CERN Drupal 8 theme, producing and implementing the branding for IPPOG digital portfolio and migration of the content of Physics masterclasses website to the new IPPOG website (hereafter referred to in whole or in part as the "supply"). Qualified and selected companies will be considered for the award of a purchase order, to be placed by the 01/03/2019 and deliveries including some options are foreseen over a 6 months period from the placement of the purchase order with the option of 2-years of support and training.

February 2019

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1. INTRODUCTION

The supply is for "International Particle Physics Outreach Group" (IPPOG), the scientific collaboration of which CERN is a principal member. At the same time, IPPOG is a key partner of CERN in promoting its mission globally. One of the In-Kind contributions of CERN to IPPOG is hosting of the IPPOG website and offering the CERN web infrastructure in Drupal 7 and Drupal 8 (See the Annex IT-4261 TS[1], Section 3). The successful bidder will therefore be required to comply with the CERN rules and work in close collaboration with the project steering group (see Section 2.3) including persons from the CERN web development team. Thus, it is important for the bidder to understand the context and get familiar with both IPPOG and CERN.

1.1 Introduction to CERN

CERN, the European Organization for Nuclear Research, is an intergovernmental organization with 22 Member States[2]. Its seat is in Geneva and has sites on both sides of the French-Swiss border.

CERN's mission is to enable international collaboration in the field of high-energy particle physics research and to this end it designs, builds and operates particle accelerators and the associated experimental areas. Scientists from research institutes all over the world use CERN's installations for their experiments.

The accelerator complex at CERN, presented below, is a succession of machines with increasingly higher energies. The flagship of this complex is the Large Hadron Collider (LHC).

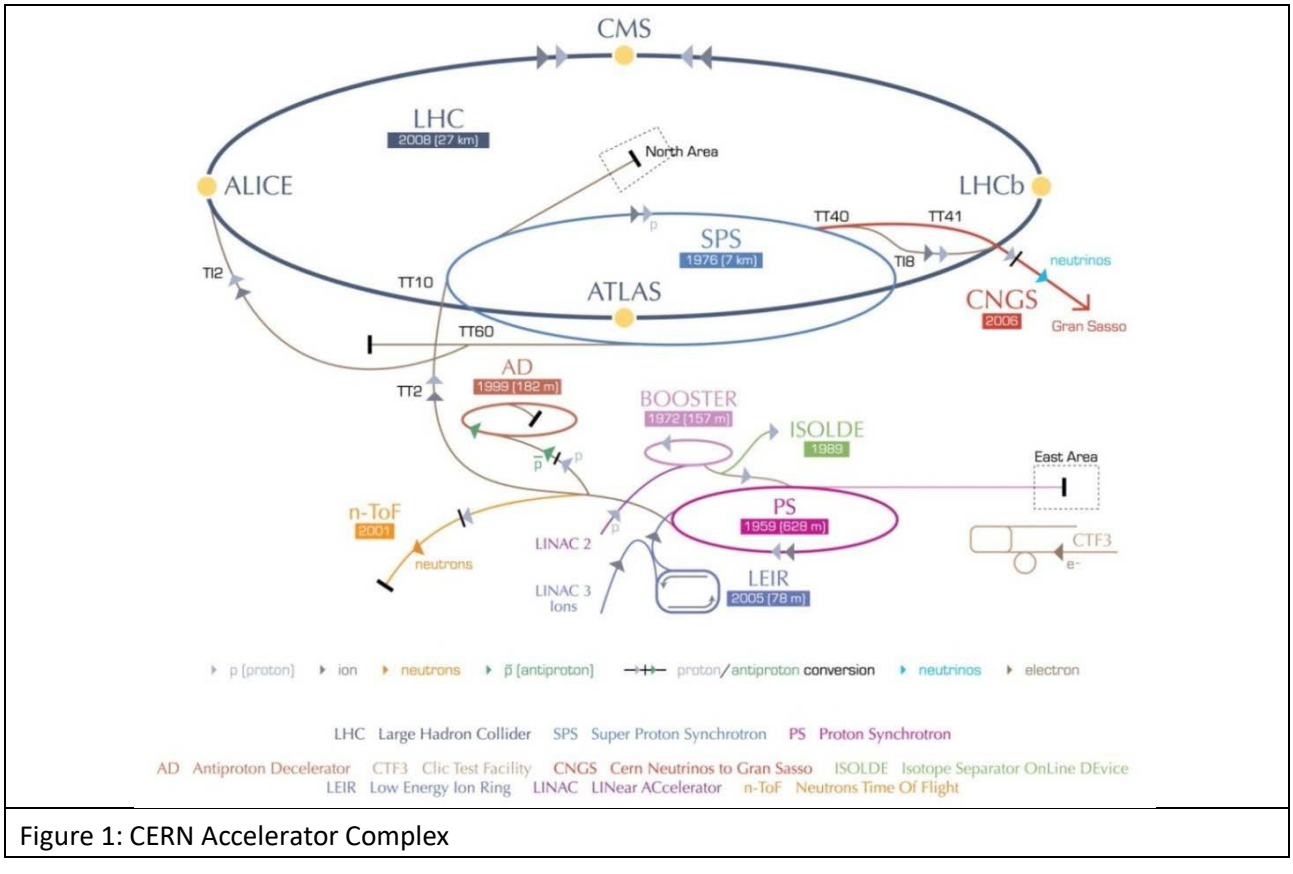

Figure 1: CERN Accelerator Complex

Further information is available on the CERN website: http://home.cern

[1] Annex: Technical specifications to IT-4261

[2] http://home. cern/about/member-states

1.1.1 Introduction to the CERN digital portfolio

The World Wide Web was born at CERN, and the laboratory's extensive community has a long history of communicating and collaborating online with minimal restrictions and regulations.

CERN's web includes more than 10,000 websites that serve a broad variety of audiences and purposes.

These include websites managed by:

- The CERN Education, Communications and Outreach group, such as the main website (http://home.cern) and the press website (http://press.cern);
- Other CERN sectors, departments, groups, units and sections;
- Experiments and projects;
- Individuals.

For an idea of some websites hosted at CERN consult: http://cern.ch/directory/

CERN's websites are built on web and networking services provided by the IT department. For further information about website creation at CERN consult http://ux.web.cern.ch/building-websites-cern

CERN's digital portfolio also includes:

- Social media channels;
- Native apps;
- Multimedia repositories.

1.1.2 New CERN Drupal 8 themes

The new IPPOG website will be hosted at CERN using Drupal 8 and preferably, CERN theme or its adaptation with CERN override (see details in Section 3.4). This will ensure the sustainable maintenance of the IPPOG website by CERN IT web service.

The contractor will be given an external CERN user account during the whole duration of the PO.

All CERN websites are currently being migrated from Drupal 7 to Drupal 8 and new CERN hosted websites are now being developed in Drupal 8. New CERN themes in Drupal 8 have been developed following the specifications (See Annex [1] Section 3.2) and offering a range of useful features. All new CERN Drupal 8 themes with detailed documentation are available here https://webtools.web.cern.ch.

1.2 Introduction to IPPOG, its goals and mission

The aim here is to introduce IPPOG as a **network, international collaboration, forum, partner and strategic pillar** – the roles which are not reflected by the existing IPPOG website and which shall be clearly communicated with new IPPOG digital portfolio.

International Particle Physics Outreach Group's principle aim is to maximise the impact of education and outreach efforts related to particle physics. It contributes to global efforts in strengthening cultural awareness, in the understanding and support of particle physics and related sciences, in raising scientific literacy in the society, educating public on the values of basic research and in developing and training the next generation of researchers, scientists and engineers.

In particular, IPPOG's purpose is to raise standards of global outreach and informal science education efforts of particle physics, to communicate its results and findings to the public, to bring new discoveries in all areas of particle physics research to young people and to convey to the public that the beauty of nature is indeed becoming understandable from the interactions of its most fundamental parts - the elementary particles.

IPPOG is a **network** of scientists, researchers, science educators, explainers and communication specialists active across the globe in outreach for particle physics – the science of matter, energy, space and time. They come from prominent national or international professional physics centres, societies and laboratories engaged in particle physics research, and from major particle physics experiments. The diversity of their cultural and educational backgrounds brings a large and important variety of skills to the table, what allow for the effective development of novel outreach activities with maximal impact. IPPOG members represent links to several national-level science networks. This constitutes IPPOG's global network of laboratories, institutions, organizations and individuals all passionate about particle physics.

IPPOG is an **international scientific collaboration**, enabling outreach globally. Thanks to its ever growing membership and global coverage IPPOG Collaboration fosters the recognition and raises value of science outreach, develops support of fundamental research around the world. The members include almost 30 countries, 7 experiments and 2 laboratories.

For its members, IPPOG is a **forum** for exchange of information and best practices with colleagues from around the world, brainstorming platform; resource of ideas, inspirations, training and skill-building ground, platform providing access to programmes for schools; (for public talks etc.). It increases international exposure, enables centralised and coordinated efforts through partnerships.

For particle physics and scientific community IPPOG represents a **key partner** for promoting and enabling their scientific mission and activities globally, platform for engaging on a global level, building partnerships within the community and across communities, and for supporting the broader scientific objectives of particle physics and its role in the society on global level. Worldwide particle physics community has in IPPOG a strong partner at hand when reaching out to wider society in diverse ways that are adapted for every target audience.

IPPOG as a **strategic pillar** for future of particle physics and science community is helping to foster long-term, sustainable **support for fundamental scientific research** around the world. IPPOG develops programs and strategy to address the current and future challenges of the particle physics (PP) and scientific community, like declining interest in STEM-related studies, lack of support of fundamental research and mistrust in science. IPPOG's scientific education and outreach activities aim to improve public understanding and appreciation of the benefits of fundamental research, to spark interest and enthusiasm among young people, and to strengthen the integration of science in society. IPPOG not only motivates, inspires, and educates our youth in the field of particle physics, but it develops personal awareness of the value of science and of the process of evidence-based decision making, regardless of age or discipline. IPPOG helps in establishment of broad public support, as well as the commitment of key stakeholders and policy makers throughout Europe and the world for the future large-scale projects of PP community.

IPPOG helps to strengthen the **trust in science** and its method of **evidence-based decision making** to offer future generations a meaningful basis that generates supportive structure in their life. Without compromising established methods, IPPOG is exploring new paths to engage citizens – especially the young. Reaching out to high-school students and their teachers to convey the methods and tools used in fundamental science is a strong investment in the future. While only a fraction of young students will become scientists, and fewer still will become particle physicists, all will become ambassadors for the scientific method and evidence-based decision-making. Younger audiences will be more educated and appreciative of the importance of research, and thus more suited to make informed decisions about science and scientific questions for their nations and their peoples in the future.

You can find more information on IPPOG's strategic mission in tackling the future challenges in particle physics education and outreach in the input for European Particle Physics Strategy document and view point from IPPOG chair in CERN Courier.

1.2.1 History of IPPOG

The International Particle Physics Outreach Group (IPPOG) is making a concerted and systematic effort to present and popularise particle physics across all audiences and age groups since more than 20 years.

With the unprecedented global scale of the LHC came a real and explicit need for extensive efforts in communication, education, and outreach. This in turn led to the creation of new communication and outreach networks. The European Particle Physics Outreach Group (EPPOG) was formed in 1997 under the joint auspices of the European Committee for Future Accelerators and the High Energy Particle Physics Board of the European Physical Society. EPPOG widened its regional scope to become an international player in 2005 with the development of the International Particle Physics Masterclass programme, then became officially known as the International Particle Physics Outreach Group (IPPOG) in 2011.

Particle physics has become a truly global activity, with experimental collaborations such as those of the LHC experiments featuring thousands of researchers from all over the world. With this trend, IPPOG is evolving further to cover more countries, laboratories and experiments spanning all aspects of collider and non-collider research, including astroparticle physics and accelerator and detector technology. This expanding remit urged IPPOG to adopt a more formal structure to guarantee the quality and sustainability of its work.

With the growing global scale of IPPOG activities, and taking into consideration recommendations of the 2013 European Particle Physics Strategy Update, IPPOG became an international collaboration based on a memorandum of understanding in 2016. This has enabled IPPOG to secure limited financial support at a critical time, allowing it to continue to extend its network and develop much-needed infrastructure.

1.2.2 Membership and Memorandum of Understanding

The members presented on the current IPPOG website (http://ippog.org/ippog_membership), are the original members of the IPPOG group, before it became an official scientific collaboration and when IPPOG was a group of friends – scientists representing countries, experiments and laboratories. The IPPOG membership today is very different, the members are the institutions representing full countries in terms of particle physics, relevant international scientific laboratories and scientific collaborations.

In 2016, IPPOG became an official scientific collaboration following the template of other scientific collaborations at CERN and elsewhere, with the signing of a Memorandum of Understanding between 10 of its original member nations. The remaining members have since signed or pledged to sign and several other new nations have joined in. This current total of signatories is 22 nations, 4 experiments, and one laboratory, CERN, with others in the process. The signature for each country is provided by a single entity (e.g. a ministry, lead scientific institution, or in some cases a university that has a national leading role) that oversees or coordinates the efforts of particle physics outreach in that country. The signature for each experiment is typically the collaboration spokesperson or a member of management responsible for the outreach programme. CERN's signature comes from the head of International Relations. These bodies each select representatives who are identified as main actors in the field of particle physics outreach.

1.2.3 Organisation and Structure of IPPOG

IPPOG is coordinated and managed by the IPPOG Coordination Team (CT), composed of IPPOG Chairpersons, who are official representatives and signatories of IPPOG, and IPPOG Staff (Scientific Secretary and Strategy Development and Communication Lead).

IPPOG's decision making body is called Collaboration Board (CB) and consists of the representative of the IPPOG Members.

The IPPOG Forum is composed of IPPOG CB, IPPOG CT and other IPPOG Forum members, who are actively participating in the IPPOG activities, programmes, discussions etc.

The IPPOG Collaboration (IPPOG Forum and invited guests) meets twice a year for 2.5-3 days, usually once at CERN and once at the headquarters of one if its national members. All the IPPOG meetings websites can be found here https://indico.cern.ch/category/9657/.

In addition to its twice-annual meetings, the IPPOG Collaboration Board has set up several active working groups: 'Bringing Masterclasses to New Countries', 'Explaining Particle Physics Hot Topics to a Lay Audience', and 'Exhibits', as well as a 'Global Cosmic Steering Group'. These groups focus on specific issues and develop best practices to be shared within IPPOG and with other outreach and education experts around the globe.

For specific tasks IPPOG has established also a standing 'Conferences and Publications Steering Group', 'IPPOG Finance Advisory and Audit Board' and 'Website Development Steering Group'.

During every meeting Working Groups meet, work and report. Several thematic panels are set-up during every meeting to discuss and report. If relevant and of interest, these might gradually evolve to working groups.

'IPPOG Friends' is group of physics teachers interested to learn about IPPOG activities, take part and disseminate them among their colleagues and students.

IPPOG Activities and Programmes organised for its audiences are summarised in the Section 1.2.5 below.

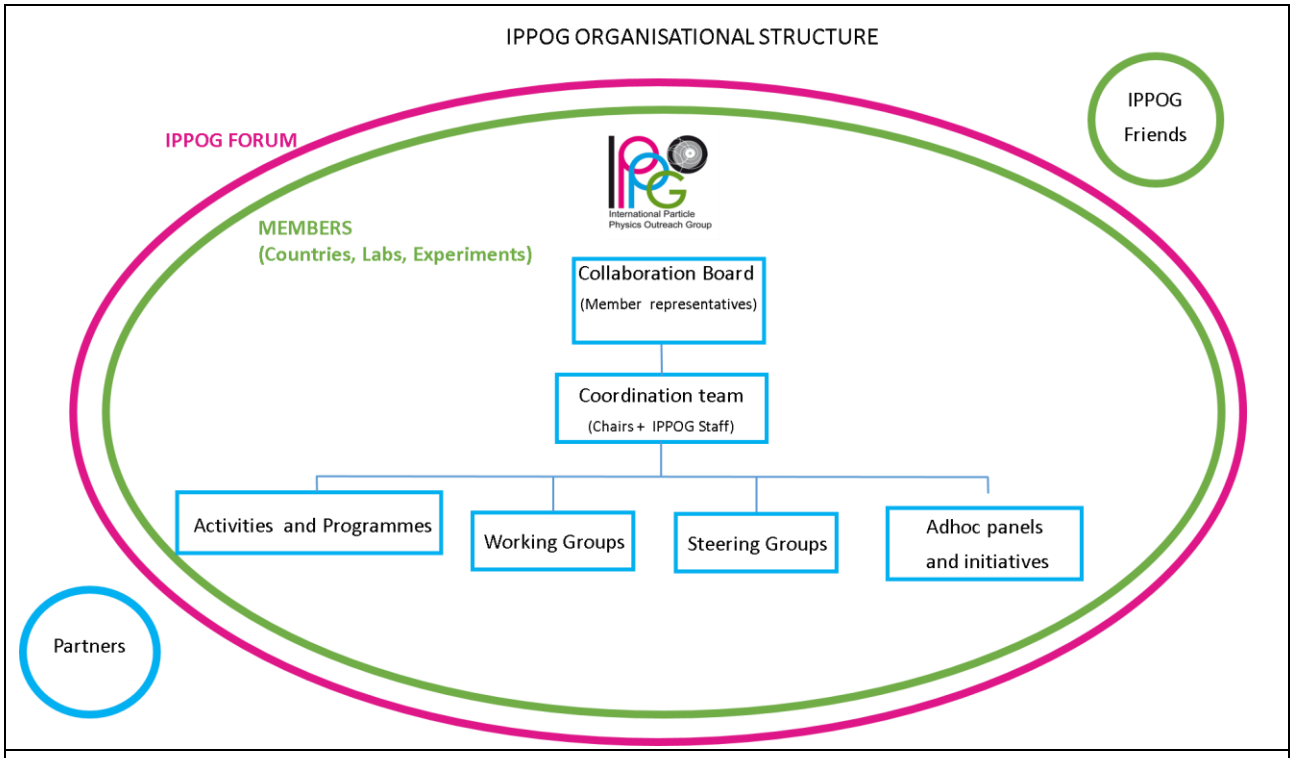

Figure 2: IPPOG organigram

1.2.4 Target Audiences

In the past IPPOG's primary audiences were the particle physics community doing outreach and physics teachers. Today the scope is broader and IPPOG basically aims to build the bridge between science and society at large, audiences of all ages and backgrounds.

- IPPOGers - IPPOG members and their representatives, members of IPPOG forum
  - seeking materials for their outreach activities
  - seeking information about IPPOG internal matters important to fulfil their functions in IPPOG (to be provided on IPPOG internal website)

- Particle Physics community, other scientists, science communicators and educators
  - seeking material in support of their own particle physics outreach projects and inspiration
- Educators and (high or even primary) school teachers
  - seeking material for extra-curriculum activity, lesson plan or projects for the classroom;
- Students seeking material or activities in particle physics complementary to what they are being taught in school
- Young generation, students – information to inspire them and motivate to study STEM subjects
- Other IPPOG present and potential stakeholders and partners, high-level representatives of potential new members, candidate members, observers, partners, sponsors and funders, who would find the basic information about the IPPOG collaboration, its mission, vision, structure, activities, resources and materials, news etc.
- General public, decision makers, politicians, funding agencies, etc.

1.2.5 IPPOG activities and programmes

IPPOG has many more activities and programmes than those few presented at the current website (http://ippog.org).

1) IPPOG publications and/or outreach and educational resources

IPPOG represents a discussion forum of specialists in PP outreach and informal education (informal exchange between individuals, institutions and labs; Working Groups and Panels addressing specific challenges of global outreach, etc.). The discussions result in development of the strategies, methods, activities and tools to reach broader audiences, based on best practices, experiences and world trends; and development and improvement of explanatory materials. These result in IPPOG publications and/or outreach and educational resources. More information on 'IPPOG resource database (RDB)' is in Section 2.2.1.

IPPOG is regularly discussing also how to explain complex PP questions to lay audience. Out of this working group, another planned project '*IPPOG collection*' is the collection of IPPOGs wisdom, meaning creating a book with the best IPPOG recommended explanations, analogies, metaphors, examples… on how to explain the complex PP issues to lay audience. This tool for the PP outreach community (everybody who wants to explain these issues to public or students, politicians…or convince media or decision makers, why it is important and interesting) would include also the arguments to be used for media, decision makers, when they are putting into question the funding of research projects and its relevance. The nice stories about the applications of PP in the real life will be also written up.

This might go directly to the publications, once we have it, but it is a long term project. In the meantime, we can have a place, featuring some best recommendations how to explain different subjects (as currently sometimes in the newsletters).

2) ***International Masterclasses (IMC)***

Since 2005 International Masterclasses (IMC) has been a Flagship activity of IPPOG. IMC programme evolved in the mid-1990s from national outreach efforts in the days of the LEP collider and has gone from strength to strength. Secondary students from around the world assemble to analyse data from a variety of experiments, including those of the LHC, under the direct supervision of scientists that are active in the research. As "scientists for the day," the students learned the fundamentals of the field, the scientific process, and the methods that are leading to headline-making discovery. The programme, which is a natural culmination of the tools, methodologies, and networks developed by IPPOG, continues to broaden in scope and global reach. In 2018, the masterclasses were attended by over 14,000 students from 225 institutes in 52 nations (CERN Courier June 2014 p37).

The 'Bringing Masterclasses to New Countries' Working Group actively seeks out new countries and new target populations around the globe to introduce International Masterclasses.

Special versions of IMC are International Day of Women and Girls in Science Masterclasses (IMC engaging young women in science) and Worldwide data day (worldwide version of IMC in 24 hours).

All information about IMC are at the existing IMC website http://physicsmasterclasses.org, whose **content and structure will be migrated to the new IPPOG website**. The goal is that the new IPPOG website reflects, that IMC is not the only one, but one of the IPPOG's activities - even though the most prominent one.

3) ***Cosmic rays global educational platform (CRGEP)***

This project in progress, which is being developed by IPPOG is another example of connection of PP and real life / curriculum. It is new IPPOG project to build a Cosmic rays global educational platform, based on all existing educational projects on cosmic rays (the ones identified so far are at the moment listed here: https://icd.desy.de/e49245/).

The idea is to:

- establish a 'universal' portal through which successful cosmic ray studies programmes can reach out to teachers and students around the world
- common webpage on cosmic rays would contain all the resources available today, including background information, data, analysis tools, an educational framework for students' investigations, a place to post results
- teachers and students worldwide will learn how to build, borrow or purchase a detector for use in the classroom

PP in IPPOG stands for Particle Physics, and not only for proton-proton (LHC physics). Therefore IPPOG is also working on broadening of physics scope of Masterclasses, to neutrinos, gravitational waves (last year Nobel Prize winners), and other physics subjects. Cosmic rays studies is an important new project of IPPOG, which would allow the connection of PP and real life and even curriculum easier, as we are all made of particles, particles are everywhere, and especially they are showering us all the time in form of cosmic rays.

Therefore detecting and analysing these showers with detectors and analytical tools used by schools (specially designed for educational purposes but using real data, also the data which have been measured by big projects) is a good mean to raise the interest of young students in particle physics and related sciences. The goal is that every teacher around the world can do cosmic ray studies, get a detector for his/her school either for little money or for free and get also all the instructions and necessary guidance, hopefully even in their language.

Two big events which are being enabled by IPPOG today and which will be inherent part of the platform are International Cosmic Day and International Muon Week.

At the moment project is only being designed, however **it will be part of the new IPPOG website** like IMC. More details on what is required for the new GC website are in Section 2.2.3.

4) ***IPPOG Competition Particles for You (P4U)***

IPPOG has also an aim to reach out to the "unconverted audience" – those who do not want to study STEM or are not interested. However, everybody can be inspired by the idea that we live in the world of particles. Therefore in 2016 IPPOG has launched the competition (sponsored by the European Physical Society) - challenge for primary and secondary students and teachers to use their creativity to help IPPOG bring the thrill of Particle Physics to the world. The task was to create an educational, fun, and inspiring tool showcasing how elementary particles are present in our everyday lives. This could be an object, prototype, lesson plan, activity, game, experiment, or even a work of art. Using creativity and including an educational aspect aim is to produce something that will get the message across that science and with it the elementary particles are a fundamental part of our lives. There were two categories: one for primary level students (age 12 and under) and their teachers, and one for secondary level students (age 13 and up) and their teachers. Individuals, groups, classrooms, and even groups of classrooms from anywhere in the world were eligible,

including aspiring artists, musicians, and writers, as well as math and science wizards. Goal was to teach the rest of the world how particle physics is everywhere and how it affects our lives in many ways.

The top two contributions in each category were awarded with:

- A visit from an IPPOG particle physicist, who gave an adequate level introduction presenting the big picture of the field and who will answer your questions (in local language);
- A special gift from CERN and an award certificate for each individual team member, in recognition of their achievement;
- For the school teachers of the top two secondary-level student teams or individuals, a genuine working particle detector CosmicPi was given. Connecting a laptop running a web browser to this detector, and measure the cosmic ray muons directly in class.

Competition was translated to 16 languages and about 80 projects from 16 countries have been received.

These details are not anymore on the IPPOG website, where you can find only the information on winning teams (https://ippog.web.cern.ch/particles4u).

5) Creating Ambassadors for Science in Society (CASS)

This is the pilot programme organised by IPPOG in collaboration with other partners (International school of Geneva, Rotary International, Entrepreneurs in Action and CERN Ideasquare). It is part of programme for 16 year-old students called "Classroom to Boardroom", which is about "creating 21st century problem solvers who innovate as technologists, think as entrepreneurs, and act as social change agents - making Global Goals everybody`s business". Students are given a business/entrepreneurship/societal challenge usually by a big company, international organisation or a bank, to work on for 2 days under the supervision of a professional coach and at the end they present their findings to the challenge-setter. This was for the first time that science is being addressed. IPPOG gave to 28 ECOLINT students a challenge to create IPPOG's marketing and fundraising plan. The workshop is entitled "Creating Ambassadors for Science in Society" (CASS) and more details can be found on the website https://indico.cern.ch/event/736469/. The pilot CASS programme took place in 18-21st of June 2018. After the informative day at CERN followed by 2 days of working on the challenge, students came back to CERN in order to present their findings at Ideasquare during one hour to senior IPPOG/CERN panel, followed by 30 minutes of panel and Q&A, where panellists evaluated their work and encouraged them. The panellists have been very impressed by the professional approach of "kids", their neutral unbiased views and truly valuable input. Moreover, follow-up to work closely with the newly formed ambassadors for science in society, as IPPOG's certified volunteers, is continuing.

6) ***Supported/enabled competitions:***

Beamline 4 Schools (B4S): Worldwide competition for high school students (16-18) to propose and run the experiment, where winning teams are invited for 10 days at CERN and work on the experiment with CERN experts. Every year 200-300 teams from schools around the world engage in this competition. More details to be found here: https://beamline-for-schools.web.cern.ch/.

IPPOG plays a role of enabler, meaning, that IPPOG disseminates the information about the B4S everywhere throughout its network around the world including the translation of the information in the local languages. Moreover, experts from IPPOG also act as judge during the winner's selection process.

Cascade: Competition where the motto is "Cascade of knowledge and information from High School students to wide public". Teams of 3 high school students film 15 minutes presentation of their physics project and send it to the organisers. Winning teams present in font of up-to 500 people including their parents, friends, school etc. This competition was first presented in IPPOG by the representative of England and later was organised by Slovak representative in Slovakia with lasting tradition. There is no dedicated website for this activity, but would be good to include it at least with short information on the new IPPOG website, among other projects that IPPOG enables. Here is link to UK version and Slovak version.

Many other activities and programs originally organised in one country have been spread around world thanks to the IPPOG.

7) *Open data initiative support*

IPPOG is an enabler of the Open Data initiative within the full IPPOG network, ATLAS and CMS being its members, for example ICM are also based on Open Data from CERN. More information here: http://opendata.cern.ch/

1.2.6 Existing IPPOG digital portfolio

IPPOG digital portfolio includes:

- public and internal web pages, currently located at http://ippog.web.cern.ch (http://ippog.org)
- social media channels: Facebook: https://www.facebook.com/IPPOG/

Twitter: https://twitter.com/ippogorg

Instagram: https://Instagram.com/ippogorg

The current IPPOG webpage was designed in 2011 as a first implementation using the Drupal content management system. That system had been installed at CERN few years ago, where the pages are hosted, and was guaranteed to be maintained over a significant time period, assuring long-term support. A local professional design team was hired to develop the Drupal theme and to work with IPPOG developers to populate the pages with content. This implementation was planned to be a first iteration, with subsequent iterations providing improved design and functionality.

For various reasons, both the original design team (company) and the chief IPPOG developer discontinued support and the pages have remained static, with the exception of added content and minor adjustments. After the consultation with several independent DRUPAL experts at CERN, it was discovered that the website have been built mostly by using hard coding and thus very few features of Drupal Content Management system are functional. Moreover, many old and outdated modules without any support by CERN Drupal team are used. The main issue is that the current IPPOG website's theme is not a CERN theme and therefore no support and maintenance can be provided by CERN experts.

It has been agreed that the efforts should be moved to the creation of the brand new sustainable website using CERN Drupal 8 theme and thus ensuring the continuous maintenance and support without any additional efforts and costs (See Annex [1]).

1.2.7 Developing new IPPOG website

IPPOG has entered to new era as an official international scientific collaboration, as an umbrella to enable the outreach of particle physics globally aiming to build the bridges between particle physics and society, inspire young generation to become scientists and ambassadors for scientific method; and playing a role of strategic pillar for fostering a support for fundamental research in the society. By doing this the goal is also to influence the attitude of different stakeholders in the society towards the science in general and its important role for the humanity globally.

With the new website, IPPOG aims to become more visible and communicate these messages to our existing and new audiences, the new potential members, partners and sponsors.

IPPOG needs to get the visual identity improved in order to pursue its mission – create the awareness about the beauty of PP and its relevance in society and help building bridge between particle physics and real life.

The current IPPOG website does not reflect this mission. Therefore, IPPOG is now embarking on an ambitious project to improve the user experience across the IPPOG digital portfolio (website and social media channels) and to strengthen the IPPOG brand online by:

- Creating a new website for the Collaboration (creating art direction and design new IPPOG website based on this art direction and implement it using CERN Drupal 8 theme or override)
- Create branding to strengthen IPPOG visual identity and professional look for use in all IPPOG communications;
- Creating welcoming and user-friendly digital environment for the IPPOG community, audiences and users of its digital portfolio
- Revitalising the social media channels and finding ways how to make them efficient and useful

The highest profile usage of IPPOG's web pages today is in support of the International Particle Physics Masterclass (IMC) programme (http://physicsmasterclasses.org), but it is the goal of the new design to greatly broaden the audience type and usage of the web pages. IMC is the flagship activity of IPPOG, but IPPOG is much more than IMC (See Section 1.2.5, point 2). The new website must reflect all these IPPOG activities and aspects. The site shall become more open to students, teachers, and the general public, for it to become the primary source of particle physics outreach material in the world. IPPOG seeks to improve visibility, accessibility, and overall quality of the user experience.

The design principles that underpin this work are:

1. Design for people – structure easy to navigate
2. Appealing look – graphical design to create wonder
3. Sustainable functionality and maintenance – CERN Drupal 8 web infrastructure
4. Reflecting the spirit, values and noble mission of IPPOG – to bring beauty of particle physics to society
5. High impact on the user – motivate the user to navigate the website further and to recommend it to his/her peers.

IPPOG is seeking the web design and graphical development services to support this project of developing new digital portfolio.

2. SCOPE OF THE SUPPLY

The successful bidder (hereinafter referred to as the "contractor") must supply:

- Create art direction for new web design
- Design new IPPOG websites and develop it using CERN Drupal 8 theme (see Section 1.1.2 and Section 3.3) or modify by using CERN override (See Section 3.4)
- Branding for the IPPOG digital portfolio

(hereafter referred to in whole or in part as the "supply"), as defined in this technical specification and the documents and drawings attached to it.

2.1 Deliverables Included in the Supply (Basic Requirements)

The purpose of this price inquiry is to identify a qualified bidder willing to produce a complete and coherent set of:

1) ***Art Direction:*** compatible with the new CERN Drupal 8 theme (taken into consideration the information about IPPOG above and the recommendations in Section 2.2)

- conduct User research report / user survey;

- produce prototype of menu and conduct user acceptance testing / tree testing
- produce a design document including the technical guidelines for implementation in CERN Drupal 8 environment (propose modules, content types, views, blocks etc. to be used and how);
- ***Branding:*** Produce branding elements to be used in the IPPOG digital & visual identity portfolio and which will enhance the professional visual identity of IPPOG
- Produce Template/Prototype of website: identify technical implementation of the art direction in the CERN Drupal 8 theme or creating new theme by using CERN override; and implementing the new design (see details in Section 2.2 and Section 3), so that this template/prototype can be followed to build the IPPOG website. This may include some coding, developing of modules or specific requirements (like resource database connection with CDS, roles and groups, galleries, calendar, newsletter, contact forms…). In some of these cases this should be priced separately as an option (see Section 2.1.1).

2) ***Building the website:*** following the proposed technical implementation (create content types, blocks, views, forms, modules, etc.)

3) ***Website theming:*** apply the Art direction into CERN Drupal 8 theme. The wireframes already exist in CERN Drupal 8 theme and cannot be changed. In case new need to be created, CERN override can be used.

4) ***Technical documentation:*** produce technical guidelines and explanations how to maintain and extend the website, theming, modules, etc., so that the IPPOG chief developer can extend and make changes in an easy way, build up, elaborate and populate it with further with new content.

5) ***Guidance and support:*** Provide the technical advice, support and continued assistance in further extending and maintenance of the IPPOG websites by the IPPOG chief developer (for the service beyond the completion of the purchase order see Section 2.1.1).

6) ***Description of approach to be used*** to provide solution for every deliverable

2.1.1 Options

CERN reserves the right to take up the following options during the purchase order and extensions.

- Design and development of custom modules in Drupal 8 (Section 3.7 of Annex [1] and Section 3.5 below)
- Newsletters (see Section 3.8);
- Training and support of the IPPOG chief developer for 2 years after the completion of the purchase order
- CDS and IPPOG RDB interface development (see Section 2.2.1)
- Travels: it is possible that contractor will have to come to CERN's premises more than 2 times (which is already included in the scope of the purchase order), depending on the necessity defined by the Project Steering Group (see Section 2.3)
- Some new functionalities and features might be required in the future (extension/new purchase order on the basis of daily price)

2.2 Art Direction Recommendations

In this section are outlined the existing proposals / recommendations for the new IPPOG website, which could serve as an inspiration and guideline for the contractor.

Since the last few years, IPPOG has been discussing a lot about the webpage and resource database and some proposed solutions have been identified and approved by the IPPOG community. Moreover, IPPOG has been

working with one of its main target audiences, high school teachers (HST), who come to CERN every year in summer for the CERN HST programme. During 3 weeks, HST had dedicated working groups (WG) sessions to work on different subjects, including IPPOG. In the table below is the organisational structure for new IPPOG website, which has been proposed by HST IPPOG WG in 2017 and approved by HST IPPOG WG in 2018. The proposal of the menu and structure will be worked out by the contractor in collaboration with the Project Steering Group (see Section 2.3).

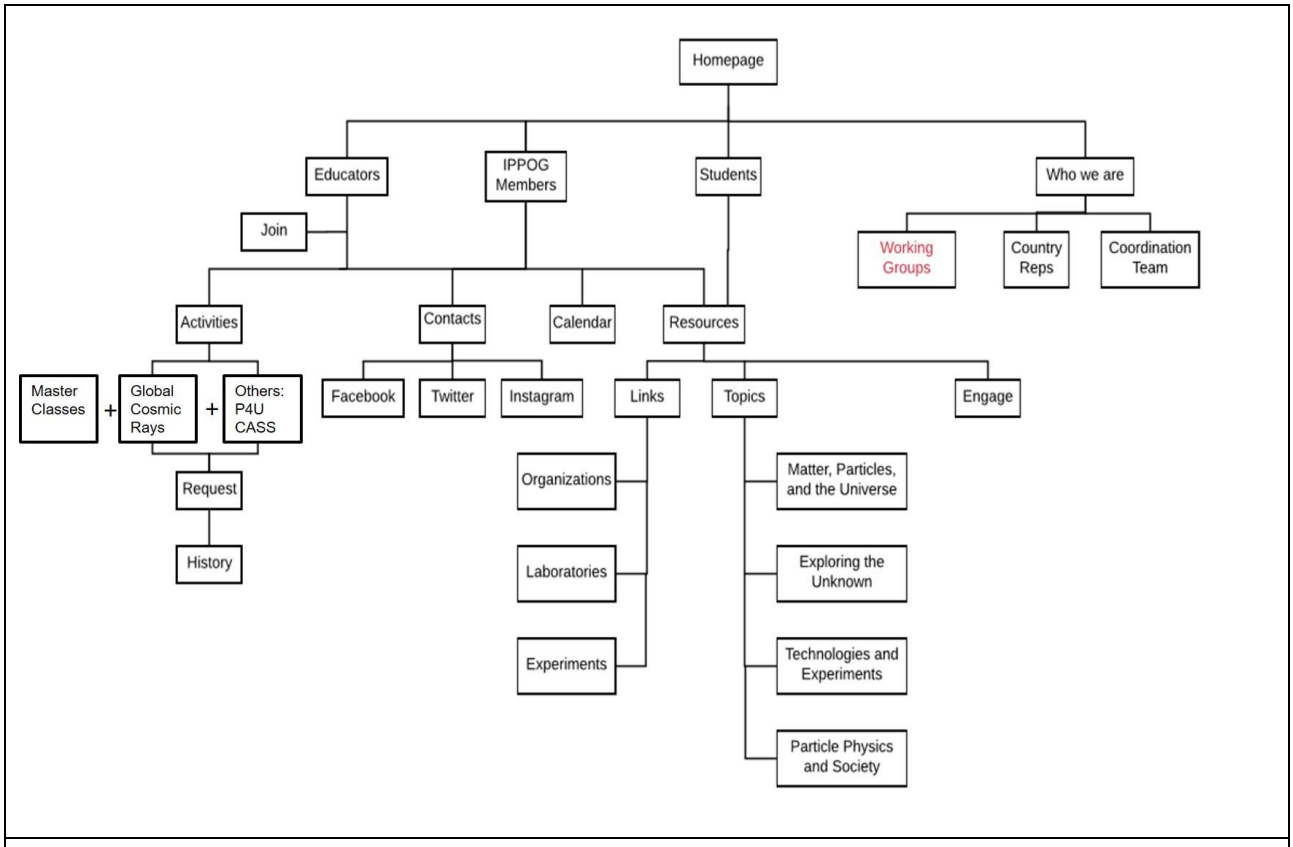

Figure 3: Structure of new IPPOG website proposed by high school teachers.

The website shall include the following items/information:

- About IPPOG (remit, vision, mission, what we do…) - see Section 1.2
- Structure: Members, Coordination Team, Representatives of members, Forum members, Working Groups etc. (as explained in the Section 1.2.2 and Section 1.2.3)

  During last 3 years, IPPOG has taken new professional pictures of IPPOG representatives, one serious and one with an object which characterises the person within the IPPOG context (see https://ippog.web.cern.ch/sites/ippog.web.cern.ch/files/IPPOG_Portraits_november_2015.pdf and https://ippog.web.cern.ch/sites/ippog.web.cern.ch/files/IPPOG_portraits_november_2016.pdf). The idea is to have the pictures with mouse on effect and when you go on to the official picture with the pointer, the one with an object would appear.
- Resource database (see Section 1.2.5 and Section 2.2.1)
- IPPOG Activities: IPPOG has much more activities than those few presented at the current IPPOG website (see Section 1.2.5) and all these need to be featured.
- News (see Section 3.8)

- Gallery with some organisation in folders / albums, which could correspond to IPPOG photos categories in CDS (collaboration, meeting, portraits, activities with all subcategories, competitions, events, students, teachers, general public, others)
- Place for videos (with the same organization as photos in gallery)
- Calendar (with upcoming and past events, which would move dynamically)
- Contact and other forms
- Social media –use the CERN tool for social media integration for content sharing (see Annex [1]);
- IPPOG recognised contributors – See Section 2.2.1
- National websites in different languages (links to these at some place)
- IPPOG internal pages with different subcategories (collaboration documents, list of IPPOG meeting webpages, minutes/reports, miscellaneous documents…)
- All other content which is in IPPOG CDS categories: IPPOG publications, IPPOG conference notes, IPPOG conference slides, IPPOG conference posters, IPPOG PR (external communication and design), IPPOG MOU, IPPOG minutes/reports
- More options identified by contractor and PSG

2.2.1 IPPOG Resource database

The motto of the IPPOG PP resource database (RDB) is “From wonders to excitement”. It is aimed to be a collection of high quality engaging materials, e.g. videos, posters, talks, hands-on activities and more to help you share the wonders and excitement of particle physics with teachers, students and the general public.

There are currently about 400 resources and most of them are outdated and need to be replaced by new ones. HST have done some efforts in order to curate the existing resources in IPPOG DB. They are also available in different languages, depending on their author/source.

We aim to simplification of the current resource database interface http://ippog.org/resources;

Considerable efforts have been already done in IPPOG in order to collapse large number of categories, item types and audience types to new simpler ones; and also to propose the best way how to navigate in the database (see the presentation at 14th IPPOG meeting [3]). The curated categories, shown on Figure 4, and proposed search, shown on Figures 5 and 6, have been also approved by IPPOG community and HST teachers.

When building a new IPPOG RDB, one needs to consider the following important aspects (some of these define also Technical Requirements, but are given here for the sake of having complete information on RDB here):

1) The best way to add the resources by different IPPOG contributors

Today here is a specific e-group of people who are authorised to contribute to IPPOG DB. First they need to sign-up (on the right top corner of the website), IPPOG DB administrators get information about the request and decide whether to add him/her on the e-group. Afterwards they must log-in (on the right top corner of the website) and click on “create new resource”, fill the document / webform including different type of information (title, resource purpose, text body, banner text, file upload, document type, duration, learning topics, audience, availability, author, contact, copyright (title, URL), resource language, attachment (new file), tags, related resources, add another item, additional information).

[3] Barbora Bruant Gulejova, IPPOG website and resource database, 14th IPPOG meeting, CERN 2017, https://indico.cern.ch/event/674777/contributions/2761690/attachments/1551000/2436637/HST_Teachers_IPPOG_DB_website_BBG.pdf

There should be also a place for best IPPOG contributors, which would be recognised by IPPOG by putting their picture and name to the website.

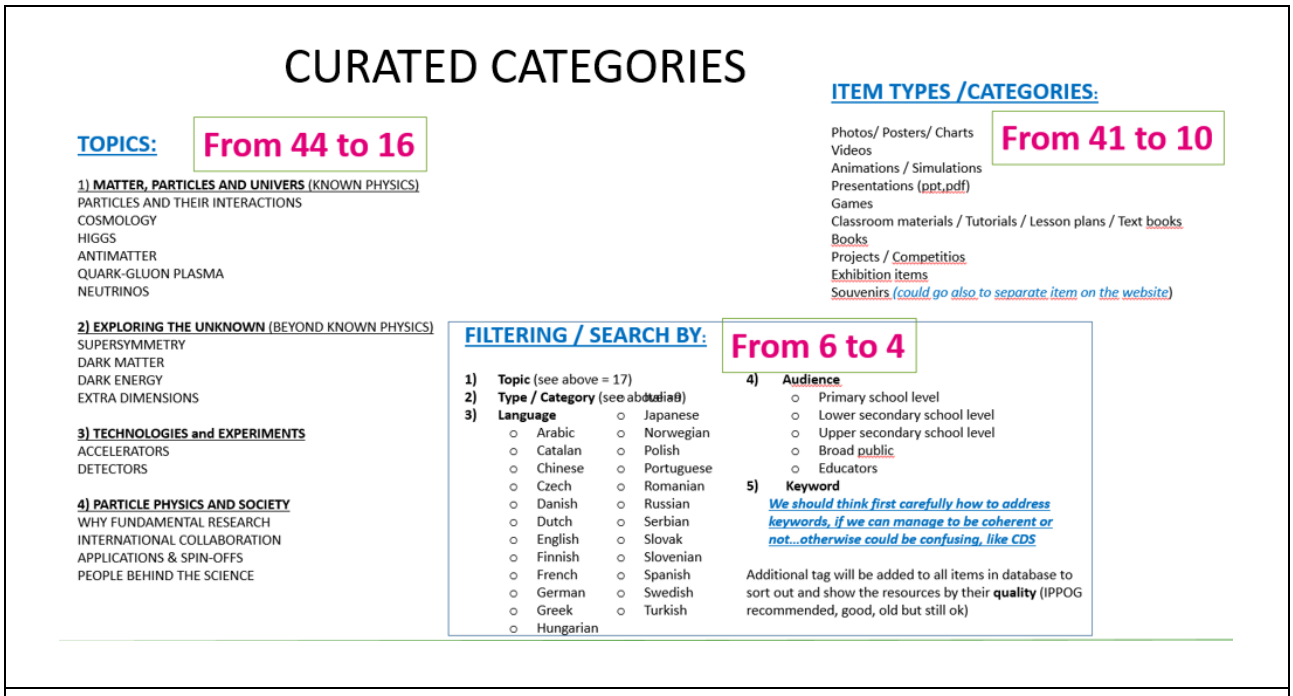

Figure 4: New IPPOG RDB proposed curated categories

2) Storage and workflow of IPPOG RDB contributions

All resources/contributions collected in IPPOG RDB will be stored at CDS (CERN Document Server http://cds.cern.ch/ – archive, where documents of CERN community are uploaded), which will provide to the user the interface to upload the files.

CDS is an ideal and safe place to host the IPPOG RDB files. Its use will keep IPPOG website "light" and easy and rapid to load. Storage of files at CDS provides also a sustainable solution, in case of future migration to new versions of Drupal or other systems.

New CERN Drupal 8 themes and components provide integration with CDS by default in order to embed images and videos from CDS to the CERN hosted websites.

CDS team will create the IPPOG RDB categories in CDS dedicated only to IPPOG, so that there will be specific URL to this collection and search will be done only within this IPPOG collection at CDS.

IPPOG contributors added by IPPOG to specific e-group, will have rights to upload to this CDS IPPOG collection. The interface to upload will be a form with the same specification as the form which we use to upload resources to the IPPOG RDB today (https://ippog.org/resources) – this form will include different fields, like file, description including all details, categories, keywords, tags.

Once the resources will be uploaded to CDS interface, IPPOG administrators will be notified by email and get all the workflow options (edit, approve, send back, publish...). It is needed that CDS team makes the uploaded resources available to API (Application Protocol Interface), so that they can be embedded to IPPOG RDB website, where the content type will be created for every resource uploaded at CDS with the same details. The data from resource at CDS with specific ID number will be pulled to the specific node number with this content type in IPPOG website. The mechanism of pulling the data from CDS to IPPOG website might be provided directly by CDS (however, today only videos, and pictures with very basic descriptions can be made available to API), what is not enough for IPPOG RDB requirements (we need tags, categories, etc). Even though it is possible that CERN will develop this option next year or in the future, IPPOG might ask the bidder

as an option to find the way how to pull data from CDS using the CDS ID to new Drupal 8 website content type resource including all needed details specified in the form to upload the RDB resources (see Section 2.1.1).

3) Tags

Tags need to be revisited. New tag was proposed by HST IPPOG WG 2018 to include the link to the high school physics curriculum, so that teachers would immediately see where the resource can be used in the classroom, given that PP is not included in most of the school curricula.

It was also proposed to tag the resources by their quality, so that the best ones appear as first ones in the search results. It was discussed that IPPOG admins could decide which is the "evergreen content" or the rating could be done by users directly (stars). Proposals from supplier are welcome.

4) How to search in the most user-friendly way

See the proposal approved by IPPOG [3] in the Figures 5 and 6 below.

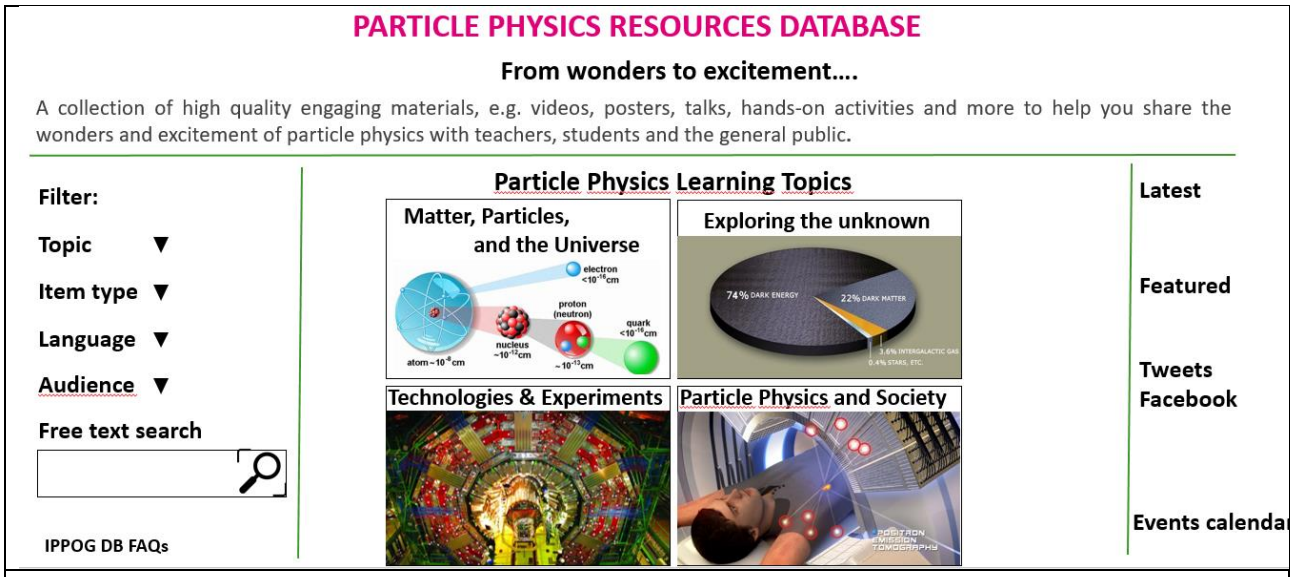

Figure 5: Proposal how to search in IPPOG DB.

Idea is that one can search by the filter on the left, but also use the quick search by topics in the middle, while at every moment there is a possibility to refine the search by the filter on the left, which will always appear there.

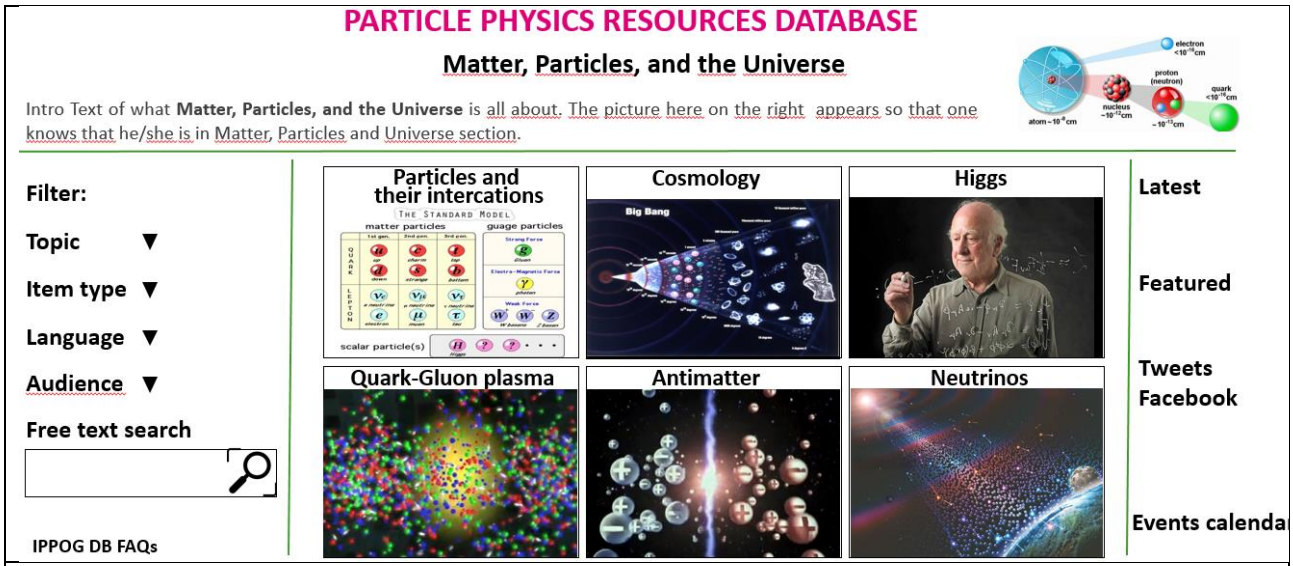

Figure 6: When you click on „Matter, Particles and Universe“

More details are available in the attached document “IPPOG DB proposals”.

5) How to display the results in the most useful way

Some proposal from IPPOG verified by the IPPOG community is in the Table below.

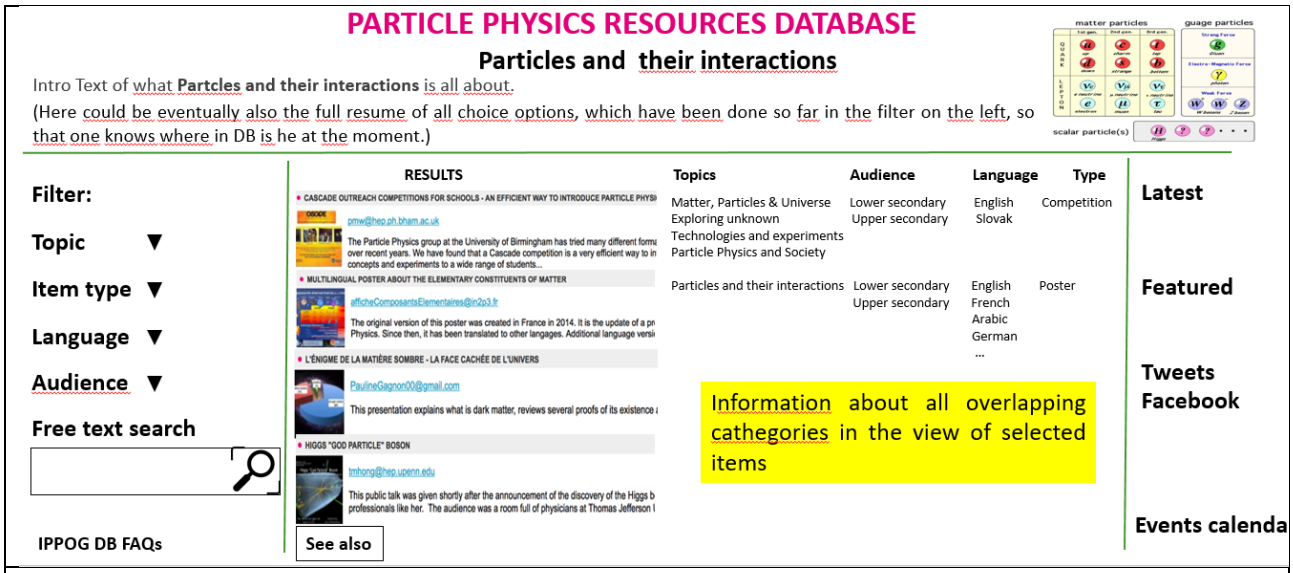

Figure 7: Proposed display of the search results when you click on „Particles and their interactions“

2.2.2 International Masterclasses

Today the website of Masterclasses (http://physicsmasterclasses.org/) is owned, designed and maintained by the Dresden University. The plan is to migrate full content of this website to the new IPPOG website, including text, images, files, videos and others. For migration of the content new design corresponding to overall new Drupal 8 features will be developed.

The current IMC website is made in plain html, there is no specific database for data stored, all the data is in individual html-files. Majority of these files are the single institutes in "My Country". Website contains roughly 5000 pages. 80 % are pages from the measurements in various languages. Website was just migrated

to central server of University of Dresden. IMC web-master would be a part of PSG. University of Dresden would provide full access rights.

2.2.3 Global cosmic rays portal

Temporary collection of projects to be included in the webportal is here: https://icd.desy.de/e49245/.

Completely new website shall be developed based on specification and requirements below.

Target Audiences

- Cosmic Rays (CR) Studies project managers who are members of GC.
- Teachers
- Others who might be interested in joining GC or starting a CR project
- Students - info on astroparticle physics and links to projects.

Expected usage scenarios

A project manager will be able to edit the project description, post events, post requests to collaborate on an investigation for example International Cosmic Day (ICD) or a request to check for an unusual change in the flux rate, meet online (would be nice to set up the bimonthly video cons from here)

A teacher will be able look for projects by country, find information about upcoming events to pass along to their students, fill out a form to request information from project(s) of interest with the idea that they might want to join

Others would be able to fill out a join GC form or request information about how to get started, selecting one or more projects from a list.

A student will be able to find information about astroparticle physics and information about any event a student could join.

Content types

Pages, Documents, Events, Forms ('contact us', 'join us'), Place to report site issues, World map, Search Content, Resources section (where projects could post information about their detectors, for example), Place to post events or perhaps a calendar (right now we do not have enough events to warrant a calendar), seek collaborators for an event.

Groups (current project managers will be an e-group, login will be required where they can post working documents, etc.)

Navigation bar

Astroparticle Physics (short intro with links to more detailed info targeted for high school students); Projects (page with short description with logo and links); Events (short description with link and perhaps calendar); About (overview of GC); Login (when more items might show up on the navigation bar but at this point not sure what)

Operation and Maintenance expectations

Some new functionalities might be required in the future with more experience on the project (as part of the maintenance, support and training – see 2.1.1).

GC Steering Group leaders will be responsible for overall content and project leaders will be responsible for their own content. These two different e-groups will have different rights/roles.

Protection requirements

There should be a login for project leaders who are part of GC.

2.2.4 Particles For You

Today the competition P4U is not presented well on the IPPOG website. The details about the competition (see Section 1.2.5) should be visible. Some citations from the enthusiastic participants should be posted somewhere and more pictures of the best results from competition should be shown in gallery.

2.2.5 Other activities

Based on the existing and planned IPPOG activities presented in Section 1.2.5, contractor shall propose how to include all these on the new IPPOG website.

2.3 Working framework, people and team work

Contractor will work closely with the Project Steering Group (PSG) including:

- IPPOG co-chair (Steve Goldfarb)
- IPPOG chief developer (Barbora Bruant Gulejova)
- IPPOG advisor (TBC)
- CERN web design expert managing CERN websites (Sotirios Boutas)
- CERN web team back-end expert (Eduardo Alvarez Fernandez)
- IMC website webmaster (TBC)
- Cosmic rays project coordinator (TBC)
- Contractor's web design team

During the full duration of the PO, the contractor is required to provide a dedicated and stable web design team of employees, including:

- A dedicated user researcher (UX team)
- A dedicated art director
- A dedicated front-end interaction developer
- A dedicated back-end developer

This team shall include at least one English speaking commercial contact and one English speaking technical contact person for the entire duration of the purchase order.

The contractor shall assign a sufficient number of qualified personnel for the provision of the supply and related services. The contractor shall be responsible for the training of his personnel so as to ensure the compliance of the supply. The personnel assigned by the contractor to the purchase order shall at all times remain under the sole direction and responsibility of the contractor. The contractor shall forthwith replace, if so requested by IPPOG/CERN, any of the personnel assigned to the purchase order whose conduct or whose administrative situation could adversely affect or is adversely affecting the proper performance of the purchase order (or any other activities on the CERN site).

Most of the activities shall be performed at the contractor's premises (user research, art direction, design document and technical guidelines development, code development and testing if needed, template/prototype development and testing, graphical elements development…). Some activities might take place completely or partly on CERN site (training, user research, template/prototype testing, project meetings…)

Project meetings of Project Steering Group shall be held regularly (see Section 4), where the different parts of deliveries will be presented by contractor and only when approved by PSG, the next agreed step will take place. It is possible that several iterations will be required until achieving compliance with the technical specification.

The first PSG kick-off meeting and the last PSG meeting at the end of the purchase order to hand out the final deliverables with all required documentation and instructions will take place at CERN and are included in the scope of the purchase order. All additional required travel of contractor to CERN are defined as an option (see Section 2.1.1).

2.4 Items and Services provided by CERN

CERN will provide the contractor with accounts for accessing CERN resources and services (Drupal, Git, DFS, CDS etc.), which will be used strictly for the scope of the supply. Contractor's team will also be given the access rights to existing IPPOG digital portfolio.

3. TECHNICAL REQUIREMENTS

The supply shall include and be compliant with the following parameters and conditions:

3.1 Art Direction

The design specifications shall include:

- Defined information architecture (refined sitemap, wireframes, etc.);
- Branding

All these shall be based on new CERN Drupal 8 themes, whose templates cannot be changed. The role of the contractor will be to adapt an existing Drupal 8 theme complying with the CERN guidelines based on the design or develop a new using the CERN override.

3.2. Website building

After having built the content setup template, design and technical guidelines (content types, taxonomy, views etc.), these will be implemented to CERN Drupal 8 theme or adapted by CERN override and the website shall be built populated by content migrated or newly provided by IPPOG.

3.2 CERN provided technical support

CERN Drupal themes and web infrastructure which will be used to build the IPPOG new website, include many useful tool and functionalities, which are to be used instead of developing from scratch, like: web experience library (Section 3.3 of Annex [1]), content import and export services (Section 3.8 of Annex [1]), user interface (Section 3.11 of Annex [1]), browser compatibility (Section 3.12 of Annex [1]), multilingual capabilities (Section 3.3 of Annex [1]) and mobile and responsive design (Section 3.14 of Annex [1]).

3.3 Drupal 8 themes

CERN Drupal 8 themes are given for disposal of IPPOG team and have many useful properties and functionalities (for more details see Section 3.2 of Annex [1] and https://webtools.web.cern.ch).

Among other advantages:

- The themes support and follow the latest web design methods and technological trends;
- The themes are compatible with all web browsers according to section 3.12 of Annex [1] and responsive according to section 3.14 of Annex [1];

- The user interface (UI) of the themes are compliant according to Section 3.11 of Annex [1];
- The themes are easy to install in any Drupal website by only copying and enabling them.
- The themes are kept up to date in order to be compatible with future versions of Drupal
- The components for different features (slideshows, image galleries, banners…) are provided, and users are not required to install any new modules

The chosen final design will be implemented into one of the CERN Drupal 8 themes and the website template prepared, ready to be used to build the IPPOG website by the chief IPPOG web developer.

When implementing the design to CERN Drupal 8 theme, the following shall be taken into account:

- The templates of CERN Drupal 8 themes cannot be touched, the architecture of the website (wireframes…) must be adapted based on the CERN Drupal 8 themes.
- All the features (image galleries, video galleries…), which are provided by CERN Drupal 8 themes, shall be included in the new template and their functionality tested (the full list of features can be seen here – https://webtools.web.cern.ch).
- CERN Drupal 8 themes are already responsive by itself (desktop, tablet, mobile…), but contractor shall ensure that the provided implemented design is adapted to work with the responsiveness of CERN Drupal 8 themes. The responsiveness tests must be performed.

3.4 CERN theme override

Any modifications to CERN Drupal 8 theme are possible using CERN override theme by respecting the basic elements of the CERN Drupal 8 theme (see https://webtools.web.cern.ch).

3.5 Modules

All the modules used and proposed to be used shall be at least in released candidate (RC) state or the official version shall be supported by Drupal security advisor policy.

It is preferable to use the modules in CERN INFRA, which are already supported by CERN. Otherwise, it is necessary to contact CERN IT Drupal team.

The design and development of additional custom modules might be required in order to achieve the desirable functionality of the new IPPOG website. At this stage the number, complexity of these modules is undefined. Therefore for the purpose of the bid, the potential bidders shall submit a bid for 2 custom modules of medium complexity. These additional custom modules must be kept up to date in order to be compatible with future versions of Drupal and in agreement with CERN IT web team (see Section 3.10).

3.6 Resource Database

Many specifications of IPPOG RDB are detailed in Art 2.2.1 above, including the connection of RDB files and CE RN document server CDS. This feature (see Section 3.8 of Annex [1]) shall be investigated and a solution proposed.

The resource database website shall provide the functionality “workflow system for publishing content”. For example, when a writer adds new content a notification (by email) goes to the editor to check and approve the article. The editor makes the necessary changes and can either send the article back to the writer for further editing (notification send) or send the article to the translation team (translator role). The translation team receives a notification, translates the article and notifies the editor. The editor receives a notification, checks the article and publishes it.

3.7 Roles and permissions

Create/propose a set of roles with different permission levels for access; especially for internal websites and IPPOG RDB but also for other parts of the website. These are the roles needed: administrator, editor of full website, editor of different parts of the website (IMC manager, specific country websites managers, Cosmic rays manager and specific cosmic project managers), working groups conveners, working group members, contributor to RDB, IPPOG internal (access rights only)… During the implementation phase IPPOG might come up with some additional roles and might not use some the listed above.

3.8 Newsletters

Nowadays IPPOG has newsletters published in 4 pages pdf format around 2 times a year (between 2 IPPOG meetings) - http://ippog.org/news

The idea is to find the more efficient way how to share the IPPOG news with our audiences and maybe to develop the online form of newsletter.

There is a plan for newsletter functionality for CERN websites (see Section.3.10 of Annex [1]) not finalised yet. Once finalised it could also be considered to be used by IPPOG website. However, proposal from contractor can also be an option (see Section 2.1.1).

3.9 Portraits of IPPOG representatives

Photos of representatives of IPPOG members will use the mouse on effect: when you go on to the official picture with the pointer, the one with an object would appear (see Section 2.2).

3.10 Collaboration with CERN IT team

During the execution of the purchase order the contractor shall be in close and regular contact with the CERN IT web team, including the person responsible for website management and the person at the back–end of the CERN websites and themes (see Section 2.3).

3.11 Security

The supply shall provide:

- High level of security of the data, following CERN's privacy rules.
- Best security practices and industry standards for ensuring data confidentiality, integrity and system availability must be followed.
- Data and servers shall be hosted on the CERN site in France or Switzerland.
- CERN will be the owner of the data hosted by the supply.
- The supply shall provide different levels of authorisations for users. The website administrators shall be able to configure roles/rights for different level of users. The supply shall support integration with CERN Single Sign-On (SSO), using SAML 2.0. The supply shall be configured so that CERN users will be able to log in using CERN SSO. Details on configuring the application to require CERN SSO or CERN SSO 2FA (depending on the features) can be found in the link below: https://espace.cern.ch/authentication/CERN%20Authentication/Home.aspx.
- Record all CERN user activity.
- Disaster Recovery & Business Continuity Plan, which complies with industry standards.

3.12 Safety Design Requirements

The supply shall comply with CERN safety rules and laws as defined in CERN General Conditions of CERN Contracts.

3.13 Quality Assurance

The contractor shall plan, establish, implement and adhere to a documented quality assurance programme that fulfils all the requirements described in this technical specification.

The contractor shall comply with professional and/or CERN's standards/codes in matters of document editing, design reviews and approval, naming conventions and tagging, quality assurance/control.

Ideally, the contractor would be certified ISO 9001:2008 or ISO 9001:2015 in the field of online solutions, or be able to demonstrate compliance with a certification or be willing to establish an equivalent Quality Assurance procedure.

3.14 Intellectual property

In accordance with Article 14 of the General Conditions of CERN Contracts, any intellectual property generated in the performance of the purchase order shall be vested exclusively in CERN. CERN may at its discretion license such intellectual property, or transfer such intellectual property, to the institutes of which IPPOG is comprised. Bidders are also reminded that their deliverables shall include a license for any intellectual property necessary for the free and unlimited use of the deliverables.

4. PERFORMANCE OF THE PURCHASE ORDER

Unless specifically mentioned otherwise, the contractor shall apply the most restrictive clause in case of ambiguity between the clauses of the purchase order, including its annexes.

All deliverables and activities that are not explicitly mentioned in the technical specification, but are essential for the execution of the purchase order must be considered an integral part of the technical specification and therefore subject to clause 3.1 of *General Conditions of CERN Contracts*.

4.1 Detailed Design File

The contractor shall submit to CERN for approval, within one (1) month after the start of the purchase order:

- Detailed design file containing three detailed design proposals (website architecture, refined sitemap and wireframes, prototype of the menu) and any improvements/options proposed, based on the specifications in this document
- Branding
- Template of proposed website and implementation plan of art direction to Drupal 8 (both in case of using CERN Drupal 8 theme or override theme) including technical guidelines for implementation
- Concrete plan on how to provide solutions for each deliverable

The technical scoping/definition meeting at CERN premises or online will follow after the award of the purchase order in order to give feedback by IPPOG/PSG and it is possible that more iterations will be needed to reach the final agreement before starting the design implementation phase. For each deliverable there will be up-to 5 iterations. After having tested the deliverable by the contractor, IPPOG will have up to 1 week to test it by IPPOG Chief Developer.

4.2 Delivery Schedule

The purchase order is scheduled to be awarded on 28th of February 2019 following the selection process of the qualified bidders who have replied to this price inquiry. Further to notification of the award of the purchase order, the supply shall be delivered to CERN on an iterative sprint cycle[4] following the provisional schedule in Table below.

A provisional schedule for the delivery of supply shall be respected as given in the following table, where the expected delivery dates refer to the months after the award of the purchase order. This is only a proposal of the schedule and contractor can propose adapted version. It includes only basic requirements and not the options and additional requirements which might arise as the website and its need are dynamically evolving.

Expected Date (months)	Deliverables
M0 = 1st of March 2019	• Purchase order award • Kick-off PSG meeting - as soon as possible after having studied all materials in this document, annex and links
M1 = 1st of April 2019	• Produce design file as described in Section 4.1 including: • 3 proposals of design (art direction: website architecture with sitemap, wireframes, prototype of menu) • Identify additional functionalities / options, including the eventual use of CERN override (if needed to implement chosen design) • Branding • User research survey / report based on the IPPOG's audience • Proposed implementation plan • PSG meeting to present the proposals
Max 2 first weeks of M2 = 15th of April 2019	• Final chosen design to be followed or request for changes/ more proposals • This could be followed by up to 5 iterations to reach satisfactory result
2 last weeks of M2 = 1st of May 2019	• User acceptance testing (UAT) of prototype of temporary menu / tree testing • PSG meeting • Adaptation of menu based on the UAT and finalization of design / website architecture • Agreement on final design, website architecture and technical pathway to implement the design to CERN web infrastructure (using CERN Drupal 8 theme or CERN override)

[4] Iterative sprint cycle means that the work is being done in several iterations, when different parts of deliveries are being consulted with client and subject to his agreement the work continues. Sprint means the period to finalise some delivery (usually upto 2 weeks), followed by presenting the delivery to client and depending on the feedback from client, either change or testing followed by another sprint.

	• Final agreement on masterplan: what, how and when will be done
1 week of M3 = 8th of May 2019	• Website prototype/template – technical implementation of Art direction to Drupal 8 theme • PSG meeting • Testing
M3 = 1st of June 2019	• PSG meeting • Website building following agreed technical implementation
M4 = 1st of July 2019	• Website building • Website theming PSG meeting
M5 = 1st of August 2019	• Custom modules if needed and ordered • Final testing • Final design document and technical guidelines to extend, change and maintain the IPPOG website in Drupal 8
M6 = 1st of September 2019	In case there will several iterations (up-to 5) for each deliverable, one more month might be needed.

The contractor must deliver the whole supply to CERN on an iterative sprint cycle, working together with the PSG (web team and the content team) as required, following a provisional schedule including several development sprints.

CERN reserves the right to amend this delivery schedule before the start of the work. In such a case, CERN will inform the contractor in writing about the definitive date to start working on the supply one week before this date. CERN and its representatives must have free access during normal working hours to the contractor's premises, during the purchase order period.

The schedule must make provisions for CERN's official holidays related to the execution of the purchase order.

The programme must include preliminary dates for inspections and tests.

4.3 Working on the CERN Site

Any contractor working on the CERN site shall take into account and implement the rules and provisions defined in the document entitled *Working on the CERN Site*.

https://edms.cern.ch/ui/file/1155899/LAST_RELEASED/*.pdf

Moreover, any contractor must inform, in writing, his employees concerned and his potential sub-contractors about rules and provisions related to working on the CERN site. He must also take the necessary measures so that his sub-contractors also inform their employees about working on CERN site rules.

The activities performed by the contractor shall be performed on the Swiss part of the CERN site. The foreseeable preponderant share of the activities to be provided under the purchase order and to be determined in accordance with the applicable agreements[5] will be located on the Swiss part of the CERN site.

[5] *Accord entre le Gouvernement de la République Française, le Conseil Fédéral Suisse et l'Organisation Européenne pour la Recherche Nucléaire (CERN) sur le droit applicable aux entreprises intervenant sur le domaine de l'Organisation afin d'y réaliser des prestations de services revêtant un caractère transnational* and *Protocole d'amendement de la Convention entre le Gouvernement*

The contractor shall take note of the above-mentioned agreements and the resulting obligations for contractors and their sub-contractors (see section 1.3 of the document *Working on the CERN site*).

4.4 Documentation

A complete set of documentation for all the deliverables, written in English in both PDF and Word format, shall be provided at the time of the delivery. The documentation for the users shall include instructions of how to use the deliverables. The documentation for the developers shall include full specifications and detailed technical information as well as detailed instructions of how they can modify the deliverables.

4.5 Acceptance and Warranty

Acceptance of the supply shall be given by CERN only after the delivered/installed/commissioned supply is deemed to be in conformity with the purchase order including documentation referred to in this technical specification, all tests specified have been successfully completed and all tests or other certificates have been submitted to CERN. The contractor must provide a two-year warranty period for the whole supply.

4.6 Maintenance, updates, guidance, continuous support

The bidding price shall include the price of maintenance, updates and technical guidance which will start after the end of deliveries / project.

4.7 Price proposal

The quality component of this price inquiry is very high.

The costs breakdown shall be proposed by bidder for all following categories:

- User acceptance testing
- Branding
- 3 detailed design proposals with their implementation to the CERN Drupal 8 theme and subsequent creation of the website template / prototype
- 2 custom modules development
- Website building
- Website theming
- Options (separately one by one)
- Documentation (design file and technical guidelines)
- Overall cost (specify in case of difference of the overall cost and sum of the preceding items)

5. TECHNICAL COMPLIANCE

In order to ensure the compliance with the Technical Specification, bidders are required to complete and return the Technical Annex to the Tender form.

6. CERN CONTACT PERSONS

Persons to be contacted for technical matters:

de la République française et le Conseil fédéral suisse relative à l'extension du domaine de l'Organisation européenne pour la Recherche nucléaire conclue le 13 septembre 1965, available on https://procurement.web.cern.ch/law-applicable-to-contractors-personnel.

Name	Telephone	Email
Dr Barbora Bruant Gulejova	+41 75 411 7526	barbora.gulejova@cern.ch
In case of absence:		
Dr Steven Goldfarb	+41 75 411 3201	steven.goldfarb@cern.ch

Persons to be contacted for commercial matters:

Name	Telephone	Email
Hiba Gerster	+41 22 76 78352	Hiba.gerster@cern.ch
In case of absence:		
Juan Fernando Fantino	+41 22 76 64085	Juan.fernando.fantino@cern.ch

Technical Annex to the Tender Form

Abstract

The present technical annex shall be duly completed and returned to CERN together with the commercial tender form. The information provided herein will be taken into account to establish the compliance of the bid with the technical requirements specified in the technical specification.

Failure to complete the questionnaire will result in the rejection of the bid by CERN.

TABLE OF CONTENTS

1. INFORMATION ABOUT THE BIDDER

1.1 Name and Address

Position	Name of the firm	Address
Single Firm		

1.2 Contact Persons

According to the Section 2.3 in Technical Specifications (DO-31960/EP_UAT), the Firm shall be able to make available person for the entire duration of the contract at least one English speaking commercial contact person and one English speaking technical contact.

Technical matters

Name	Tel	E-mail
If absent:		

Commercial matters

Name	Tel	E-mail
If absent:		

2. TECHNICAL REQUIREMENTS

2.1 Performance and commitment

The bidder shall be able to provide a technical proposal on how to approach the deliverables by giving a solution to all the specifications and links as specified in Section 2.1 of the Technical Specification.

Is this criterion fulfilled?

□ **YES** □ **NO**

If not, please explain why not:

.....

.....

.....

As indicated in Section 2.3 of Technical Specifications, the bidder shall provide a dedicated team during the full duration of purchase order.

Is this criterion fulfilled?

□ **YES** □ **NO**

If not, please explain why not:

.....

.....

.....

2.2 Competence and Experience

The bidder shall prove relevant competence and experience by providing the references specified hereunder.

How long does the company exist?

…….

The bidder shall have a proven competence and experience in Drupal 8 that are necessary to meet the requirements of the scope, complexity and volume specified in the Technical Specification.

Is this criterion fulfilled?

□ **YES** □ **NO**

If not, please explain why not:

.....

.....

.....

The bidder shall have experience with Drupal 7/8 web design projects (1-2 years with Drupal 8 and 5 years with Drupal 7).

Is this criterion fulfilled?

□ YES **□ NO**

How many years of experience do you have with Drupal 7? ……

How many years of experience do you have with Drupal 8? ……..

The bidder shall have done several big projects of building website design in Drupal 7/8 in last 5 years.

The bidder shall provide at least 2 relevant examples of work they have accomplished in the past corresponding to the above-mentioned competence and experience that are similar to the future purchase order in terms of scope, complexity and volume. These shall include samples of web design and reference of all clients. Please use the annexed "Reference forms" at the end of this Questionnaire and duplicate them as necessary.

CERN reserves the right to check the references provided.

2.3 Maintenance

The bidder shall be able to perform preventive and corrective maintenance of the project upon CERN request for at least a year.

Is this criterion fulfilled?

□ YES **□ NO**

If not, please explain why:

……
……

2.4 Schedule

The bidder shall be able to comply with the provisional delivery schedule stated in Section 4.2 of the Technical Specification.

Is this criterion fulfilled?

□ YES **□ NO**

If not, please explain why not and propose a new delivery schedule:

……
……

2.5 Motivation and CSR

Please, explain why do you think you will be an ideal candidate to build the design of new IPPOG website?

……
……

Does the Corporate Social Responsibility of your company include the support of education of young generation, technologies, innovations or similar? Please, give details.

……
……

3. ADDITIONAL INFORMATION

Indicate any other information that may be relevant to this price enquiry.

.....
.....
.....
.....

Date **Signature and stamp of the Firm**

REFERENCE FORM

REFERENCE	
Name of the customer	
Full address	
Name, telephone and e-mail of the person to be contacted in customer organisation	
Scope of the contract	
Duration (start and end dates)	
Approximate contract value	
Number and qualifications of personnel performing the contract (if applicable)	
Other relevant technical details	
Website of the project	

Duplicate as needed.