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## **Preamble – Particle Physics Outreach Activities in Switzerland**

Particle physics activities in Switzerland are carried out by groups located at Swiss higher education institutions (cantonal universities and federal institutes) and at the two laboratories located in Switzerland (CERN and PSI). These are all engaged in outreach activities on an individual basis to popularize basic research in general and for promoting public awareness in particle physics in particular. Via the engagement of dedicated individuals, many good projects have emerged over the years. Examples involving permanent infrastructure with sustained support and maintenance are CERNs Microcosm and Globe of Innovation; the Physiscopé at University of Geneva, the iLab at PSI, which are targeted for the interested public and for school pupils. In addition, many more activities and events are carried out by Swiss groups, such as involvements in ‘Nacht der Forschung’, in ‘La nuit de science’, as well as active participation in open day events at cantonal universities and federal institutes. Many groups maintain active links with physics teachers from local cantonal schools to either give presentations and provide discussion platforms to pupils and are inviting interested pupils and teachers to their university / institute site for dedicated tailor made lectures. Examples for the latter are Saturday morning physics lectures ‘Physik am Samstag’, or the ‘Physics Masterclasses’, which is carried out under the auspice of IPPOG, the International Particle Physics Outreach Group’.

### **1. Goal of CHIPP Outreach Activities**

CHIPP, the Swiss Institute for Particle Physics, coordinates the involvement of Swiss institutes in particle, astroparticle and nuclear physics research and teaching. It strengthens the particle physics activities of the Swiss groups, exchanges ideas and formulates strategies for current and future activities.

CHIPP Outreach has the goal to popularize particle physics in Switzerland, which is targeted towards the general public, schools (pupils, teachers), universities and media but also Parliamentarians with the aim to explain the goals, tools and methods in particle physics, and its benefit to society. It intends to demonstrate the benefits generated by spending tax-payers money in an intelligent and sustainable way including the spin-offs thus created. It shall enable wide spread support in Switzerland towards scientific thinking in general and particle physics in particular and also attract young people to take an interest in science.

## 2. CHIPP Outreach Organization

Outreach activities are pursued by many Swiss groups at their institutes. The knowledge on how to promote best certain activities lies naturally within every group. A coordinating effort is made by the CHIPP Outreach Group, the organizational structure of which is shown in Figure 1. It brings together people from all Swiss research sites involved in particle physics to discuss individual and common outreach activities, to exchange ideas and contacts. One representative from astroparticle physics (ASPERA) links particle physics outreach activities with the growing community of astroparticle physicists in areas of common interests. In addition, a representative from the State Secretariat for Education and Research (SER) acts as observer and brings in advice from the SER.

CERN, the world's leading particle physics laboratory is located in Geneva and plays a special role in basic research as well as in communication and outreach.

CHIPP Outreach, therefore, needs strong links to CERN and has put in place an institutional connection via two of CERN's Outreach bodies:

- the European Particle Physics Communication Network (EPPCN)<sup>1</sup>
- the International Particle Physics Outreach Group (IPPOG)<sup>2</sup>

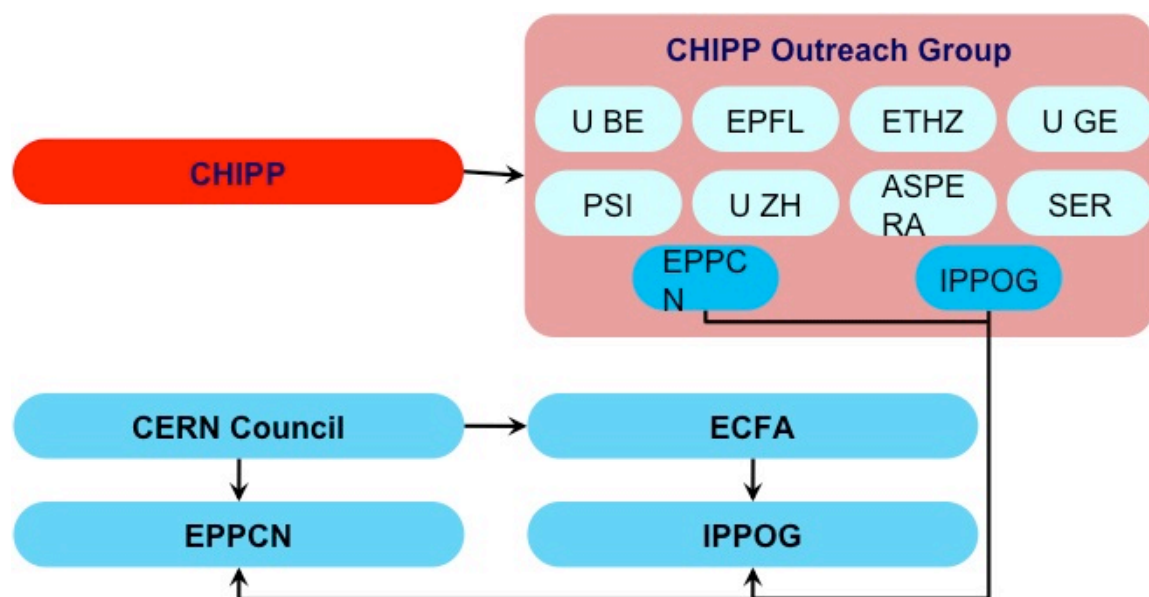


Figure 1 CHIPP Outreach Group

<sup>1</sup> EPPCN is a closely cooperating network of professional communication officers from each CERN Member State, which incorporates existing activities, proposes, implements and monitors a European particle physics and education strategy, and reports on a regular basis to CERN Council.

<sup>2</sup> IPPOG's purpose is to raise awareness, understanding and standards of global outreach efforts in particle physics and general science. It's members are: One delegate nominated by the particle physics community of each CERN Member State; one delegate from CERN and DESY; additional representatives from particle physics experiments, astroparticle physics and non-Member States of CERN.

The link to IPPOG is ensured through the CHIPP Outreach Group chairperson, who is also the Swiss delegate to IPPOG. The link to EPPCN does not exist at present, as the position of the Swiss EPPCN delegate is vacant.

### 3. CHIPP Outreach Activities

There are just a few centrally coordinated Outreach activities at CHIPP: A fact sheet about the Swiss participation in the CERN LHC experiments as well as two web sites ([www.chipp.ch](http://www.chipp.ch), [www.swiss-lhc.ch](http://www.swiss-lhc.ch)). Further Outreach activities are organized individually by the CHIPP institutes: European Physics Master classes in Bern and Geneva (University) and in Zurich (University / ETHZ), public lectures, open days at institutes, etc. A recent additional effort includes educational aspects, targeting high-school teachers and students (Master class events for students and for teachers, special guided tours at CERN, and other Swiss labs). The CHIPP Outreach Group serves as a light coordination body for such events.

### 4. CHIPP Outreach Group Activities

At present, the CHIPP Outreach Group meets about twice a year to discuss and to share information on ongoing outreach activities and to define strategies towards coherent communication across Swiss sites. Up to now, common activities have not been achieved.

To improve this situation, several elements have been identified, the first priorities being a common and professionally built web-portal for Swiss particle physics and a unique point of access to actual information for journalists, teachers, pupils, and general public.

A framework for this web-portal is proposed in Figure 2.

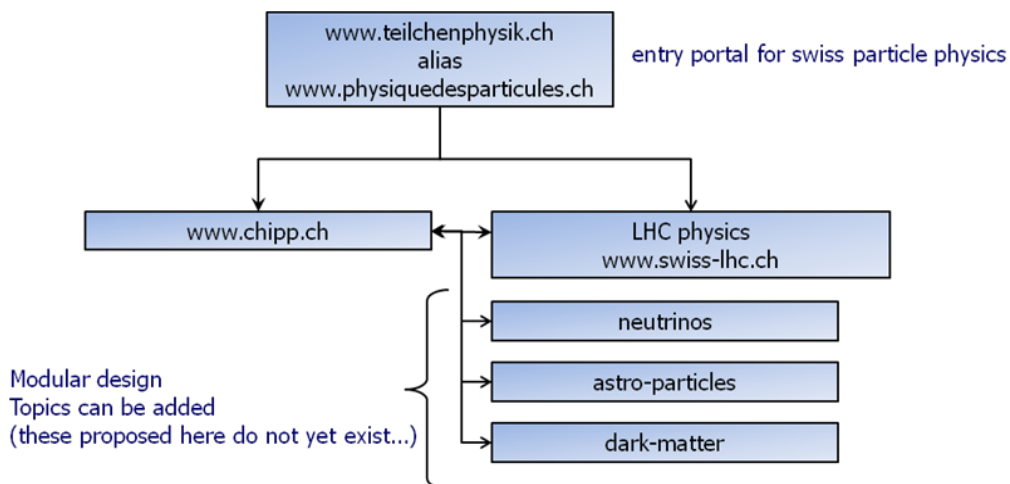


Figure 2 Swiss particle physics web portal

As mentioned earlier, two sites shown in Figure 2 already exist. They serve different purposes and suffer from limited resources. Both sites would benefit from further improvements towards a common style (where this makes sense) and actuality. Especially [www.swiss-lhc.ch](http://www.swiss-lhc.ch) needs to be enhanced in order to keep up to date with

the latest news (RSS news feeds, press-releases, etc.) coming from CERN and must be complemented with an additional element of 'Swissness' in order to become more relevant for the targeted Swiss audience.

## 5. Activities and Role of the EPPCN Delegate

The EPPCN strengthens communication between communications officers in the Member States; shares existing communication practices at CERN and in the Member States; helps preparing and implementing communication activities based around the start-up and the results from the LHC and other important CERN activities.

EPPCN meets about twice a year, with one of these meetings taking place at CERN, and the 2<sup>nd</sup> meeting organized in a CERN Member State hosting the event.

The Swiss EPPCN delegate will gain broad overview and international networking of communication professionals and will bring to the CHIPP Outreach Group the knowledge and skills needed to help promoting science and particle physics in Switzerland. He/she should therefore be a communication professional, with strong links to Swiss media and a good understanding of scientific thinking. Physicists often are also good communicators; however, imbedding communication professionals in a physics environment with close interaction and cooperation with physicists will improve considerably the messages to the target audience (general public, schools, media) and will contribute to an increased efficiency.

## 6. Resources

It is obvious that the proposed CHIPP Outreach activities (web portal, common events, publications, etc.) cannot be started without funds. Especially the setting up of the Swiss particle physics web portal will not be possible without help from professional web designers and communication experts.

In addition, the EPPCN delegate will face mission costs when attending the EPPCN meetings (at CERN, and in CERN Member States), which last typically two full days. Communications issued by CERN are usually in English and French, focussing on the CERN point of view. Adapting to Swiss needs involves translation to other Swiss languages, to add 'Swissness', i.e. emphasizing the role of Swiss researchers and industry (if applicable) to any of these messages and to make these available on the Swiss particle physics web portal and to Swiss media.

Further, the EPPCN delegate will participate actively in the CHIPP Outreach Group, with its two to three half-day meetings per year in Switzerland.

The CHIPP Executive Board has recognized the need for a sustained funding scheme allowing for an overall improved Outreach activity.

## 7. Work Packages and Budget

At present, the following work packages (WP), contracted to different persons can be identified:

### WP-1: web portal – design and implementation

Coordinating the design and implementation of the [www.teilchenphysik.ch](http://www.teilchenphysik.ch) web-portal as common entry point for all particle physics activities in Switzerland. It should combine the [www.chipp.ch](http://www.chipp.ch) and [www.swiss-lhc.ch](http://www.swiss-lhc.ch) sites and provide placeholders for further particle-physics activities of Swiss groups. Special sections for the general public, schools (pupils, teachers), universities, media and particle physicists shall render this portal as unique resource for every body with an interest in particle physics. The web-portal shall provide information in English, German, French and Italian, as deemed necessary for every page it contains.

The actual implementation of this site will need to be given to a private specialized company to ensure for a modern and appealing appearance of the site for the target audience.

**50% of an FTE over six month** will be required for discussing with members of the CHIPP outreach group, tendering and accompanying the selected company during the detailed design and implementation process.

The costs for the company will not be negligible and are estimated as high as **100 kCHF**, subject to change based on offers following the tender procedures. Especially the effort to integrate the yet to be defined extra modular topical items for neutrino physics, astro-particle physics, dark-matter searches, etc. is difficult to estimate.

### WP-2: web portal – maintenance

Keeping the [www.teilchenphysik.ch](http://www.teilchenphysik.ch) web-portal up to date. See also WP-3.

**10% of an FTE** – sustained.

### WP-3: press releases and news feeds

Press releases and other actual news are regularly issued from CERN, from particle physics experiments, and from (Swiss) particle physics groups. Further sources of messages and news come from LHC news feeds, twitter, newsletters distributed via e-mail (e.g. [interactions.org](http://interactions.org), [aspera](http://aspera.org), etc.), or from topical web portals such as [www.interactions.org](http://www.interactions.org). Many of these news items need translation and enhancements for ‘Swissness’ and should be added to the [www.teilchenphysik.ch](http://www.teilchenphysik.ch) web-portal. Important news messages need to be distributed further to the Swiss media.

### WP-4: EPPCN delegate

Active participation in the EPPCN network, including participation at EPPCN meetings at CERN and European cities, twice a year. A small report (15

minutes presentations, typically with supporting information to be provided as PowerPoint slides) at EPPCN meetings will need to be prepared.

**10% of an FTE** – sustained plus travel money of **5 kCHF/year**.

#### **WP-5: common publications**

CHIPP outreach and communication efforts need to be supported by CHIPP common publications, in the form of booklets, hand-outs, flyers, etc. to be given to teachers, pupils, Parliamentarians, etc. for providing relevant information in a sustained way.

Common publications should also be downloadable from the [www.teilchenphysik.ch](http://www.teilchenphysik.ch) web portal and be available in all Swiss languages and English.

This work is related to WP-1 by content, needs to be coordinated by a communication specialist and complemented with support from professional layout and printing facilities.

CHIPP common publications shall be provided on a best effort basis with about one publication every six months up to completion of covering all major activities with Swiss involvements.

**10% FTE plus 25 kCHF/year** for print

#### **WP-6: best practice database**

EPPOG is setting up a best-practices database of world-wide outreach activities, aimed to contain a catalogue of high quality tools, materials and templates from across the globe; primarily in particle physics with a view that these can be replicated and used for local events (open day at universities, travelling exhibitions, etc.)

The best practice database is on its way coming to existence and will need to be fed with material coming from the Swiss groups.

Familiarizing with best practice database and discussing with members of the CHIPP outreach group will be required to collect and document (where needed) the material to be added to the database.

#### **WP-7: extra events**

Universities and laboratories sometimes with help from cities and communes are organizing extra events, sometimes as one time event or sometimes on a regular basis. Examples are “Nacht der Wissenschaften”, “Nuit de la science”, travelling or temporary exhibitions, etc.

Participating and supporting of such extra events in order to ensure professional appearance of particle physics is of big importance to our community and can greatly benefit from help a communication specialist.

**10% FTE of a communication specialist** – however, these 10% are not evenly distributed throughout the year but will peak to much higher fractions when an extra event is in preparation.

During the first six months, the 5 work packages total up to **90% FTE** and will cost **115 kCHF**. The contract regarding the web portal will go to a professional web designer, the EPPCN contact person will involve a communication professional with background in science. Once the Swiss particle physics web-portal is set up and only minimal regular updating is necessary, the remaining work packages can be covered by a continuous **50% FTE** of a communication professional, leading to a continuous annual funding need of **some 70 kCHF** for the person plus approx. **30 kCHF/year** for travel and printing needs.