Travelling Exhibition Fusion Expo

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ABSTRACT

The Fusion Expo is a travelling exhibition where visitors could explore fusion energy. Fusion expo is presenting fusion energy as an environmentally acceptable, safe and sustainable energy source. Fusion research, technology and its future use is presented to the citizen of Europe.

Main target group of this exhibition are mediators such as journalists, teachers, decision makers, NGO’s, students, taxpayers, voters, primary and secondary school pupils. Since beginning of Fusion Expo support actions under EFDA (European Fusion Development Agreement) in 2008, the Fusion Expo has been the responsibility of the Slovenian Fusion Association (SFA). Since then we are trying to bring it to visitors on most interactive way. The paper will present activities and challenges of Fusion Expo support actions under EFDA.

1 INTRODUCTION

The Slovenian Fusion Association has taken over responsibility to run the Fusion Expo from 6th October 2008. The first Fusion Expo Support Action has finished on 31st July 2010. The new support action started on 1st August 2010 and was extended until the end of year 2013. The main goal and intention of this project remain the same since beginning of task agreement: to run the Fusion Expo in the most efficient way possible and to follow tasks, which needs to be fulfilled: scheduling the exhibition, supervising the local organisation, graphical work and printing Fusion Expo panels, moving the exhibits, assembling/disassembling Fusion Expo, maintenance and organisation of a supporting participation in international events for young generations.

From October 2008 Slovenian team organized 30 Fusion Expo events with around 130,000 visitors.

2 FUSION EXPO VENUES IN 2012 AND 2013

2.1 Fusion Expo in 2012

The 6th "Karlsruhe International School on Fusion Technology" took place in Karlsruhe at the beginning of September 2012. This summer school, annually organized by the Karlsruhe Institute of Technology (KIT) was focused on the development of the fusion components as well as the associated processes like cooling and fuel cycle. Over 50 participants from 7 nations listened to different lecturers who presented topics in their specific field of competence. Fusion Expo was present with two hands-on experiments (Remote handling and Turning table).
Liege in Belgium hosted 27th Symposium on Fusion Technology (SOFT) and within the framework of the SOFT, EFDA and Fusion Expo presented exhibition on Nuclear Fusion.

Turn on the light on science was European project in Rome (already since 2008) as the "European Researchers Night." An event was held on September 28, 2012 at the Planetarium of Rome. As every year, the scientific and artistic programming revolved around a central theme, which this year was "Science on Breaking News." LIGHT’12 took inspiration from major scientific news conveyed by the mass media to provide the general public proposals that are able to intrigue, inform, entertain and above all turn attention to the importance of scientific research and its products, even those that not been the subject of media attention. Fusion Expo contributed to this event with some parts of Fusion Expo – plasma ball, bicycle (human powered plant) and ITER/JET model.
From 24 October to 4 November 2012 Fusion Expo has been hosted in the prestigious new University Library in Genoa City Centre. It has been part of the official program of the tenth edition of the Genoa Science Festival and has been included in the web-site, as one of the “high-lights” of the 2012. The venue hosting Fusion Expo (Nuova Biblioteca Universitaria) has been visited by 3,200 people in 11 days. The public answered enthusiastically, despite weather alerts and the closures of some schools during the first days of the event.

In November Fusion Expo has been hosted in the prestigious location of the Aix en Provence Tourist Office in a very center of the city. Host of the event was ITER organization. ITER is designed to demonstrate the scientific and technological feasibility of fusion power and will be the world's largest experimental fusion facility. ITER is also a first-of-a-kind global collaboration. Europe will contribute almost half of the costs of its construction, while the other six Members to this joint international venture (China, India, Japan, the Republic of Korea, the Russian Federation and the USA), will contribute equally to the rest. The ITER project is under construction in Cadarache, in the south of France.
Year 2013 started with Big Bang festival. Big Bang is the largest celebration of science, technology, engineering and maths for young people in the UK. The event is aimed at showing young people (primarily aged 7-19) just how many exciting and rewarding opportunities there are out there for them with the right experience and qualifications. Fusion Expo provided the remote handling demo and that was also the main attraction at Culham Centre for Fusion Energy (CCFE) stand.

The Big Bang Fair works with partner organisations across business and industry, government and academia to try and give a flavour of the real scale of engineering and science in the UK. Since the Fair was first held in 2009, it has continued to grow. From 14 – 17 March, the Big Bang Fair 2013 saw a record-breaking 65,000 visitors attend the event at ExCeL, London. Visitors really enjoyed the demonstration and have said the challenge gave them an appreciation for the remote handling work being carried out at JET. However, it was also frequently mentioned how difficult it was to place all the pieces in its slots using just the camera view. There were around 1,000 visitors a day at the stand (approx. 4,000 overall).

In May started the Fusion Expo event in science center AHHAA in Tartu (Estonia). The AHHAA Science Centre is the largest in the Baltic States. Since 1997 interactive science exhibitions let the visitors discover and experience science. It is likely that future generations face an insufficient energy supply. Therefore, the AHHAA science centre covered the topic energy with the display of renewables such as wind-energy and solar-power in Estonia. As a
follow-up on the topic the museum sees EFDA’s traveling exhibition Fusion Expo as an opportunity to allow the audience to judge on an alternative future energy source – fusion energy. Exhibition stayed in Tartu until the end of July.

![Figure 7: Fusion Expo in AHHAA centre in Tartu](image1)

In June EFDA and Fusion Expo participated at ECSITE Annual conference in Gothenburg (Sweden). ECSITE is the European network of science centres and museums, linking science communication professionals in more than 400 institutions in 50 countries. Founded 20 years ago, ECSITE connects member institutions through projects and activities and facilitates the exchange of ideas and best practice on current issues. Members include science centres and museums, science festivals, natural history museums, zoos, aquariums, universities, research organisations and companies communicating and engaging the public in science through accessible, interactive exhibits and programmes. As a member of ECSITE, EFDA presented a beta version of fusion game at the Business Bistro.

![Figure 8: EFDA and Fusion Expo stand in Gothenburg](image2)

Events realized in second part of 2012 and in 2013 are listed in the table below and are also published on the Fusion Expo web pages http://www.efda.org/fusion-expo/ and http://www.fusion-expo.si.

In September 2013 Fusion Expo will visit for the first time Latvia (Daugavpils Science Festival). The last exhibition in 2013 will be in Prague – at science festival (Week of Science and Technology).
Table 1: Fusion Expo venues in 2012 and 2013

<table>
<thead>
<tr>
<th>Host / Event</th>
<th>Type of participation</th>
<th>Place</th>
<th>Date</th>
<th>Number of visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karlsruhe Institute of Technology (KIT), Fusion Programme</td>
<td>Some parts of Fusion Expo</td>
<td>Karlsruhe, Germany</td>
<td>3rd September - 14th September, 2012</td>
<td>50</td>
</tr>
<tr>
<td>European Commission - SOFT 2012</td>
<td>Maxi Expo</td>
<td>Liege, Belgium</td>
<td>19th September – 7th October, 2012</td>
<td>N/A</td>
</tr>
<tr>
<td>Light12 event - European Night of Research</td>
<td>Some parts of Fusion Expo</td>
<td>Rome, Italy</td>
<td>28th September, 2012</td>
<td>20,000</td>
</tr>
<tr>
<td>Genoa Science Festival</td>
<td>Maxi Expo</td>
<td>Genova, Italy</td>
<td>25th October – 4th November, 2012</td>
<td>3,200</td>
</tr>
<tr>
<td>ITER Organization</td>
<td>Mini Expo</td>
<td>Aix-en-Provence, France</td>
<td>13th November – 28th November, 2012</td>
<td>1,500</td>
</tr>
<tr>
<td>CCFE, The Big Bang Fair</td>
<td>Hands on experiments</td>
<td>London, UK</td>
<td>14th – 17th March, 2013</td>
<td>4,000</td>
</tr>
<tr>
<td>Science Centre AHHAA</td>
<td>Maxi Expo</td>
<td>Tartu, Estonia</td>
<td>17th May – 31st July, 2013</td>
<td>N/A</td>
</tr>
<tr>
<td>Business Bistro at ECSITE Annual Conference</td>
<td>Beta version of Fusion game</td>
<td>Gothenburg, Sweden</td>
<td>6th June – 8th June, 2013</td>
<td>1,000</td>
</tr>
</tbody>
</table>

3 CONCLUSION

Fusion Expo remains one of the most powerful public information tool about fusion in Europe. The exhibition will have also an important role in the future and therefore will need some refreshment. Unfortunately at the moment Fusion Expo can hardly compete with current trends in outreach and education. Current exhibition is a combination of “static” panels and mockups, which are not very interactive. One important step forward was done with a completion of hands-on experiments. Desired target places are going to be science festivals and science centres because of a large number of visitors.

There are still countries with no Fusion Expo yet: Portugal, Romania, Croatia (EU member from July 2013) and those countries are also target countries for future Fusion Expo events.