

## **65th International Astronautical Congress 2014**

### **SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)**

#### **Open Space: Participatory Space Education and Outreach (8)**

##### **DEVELOPMENT AND IMPLEMENTATION OF AN INSPIRING EDUCATIONAL WEBSITE FOR THE ISRAELI SPACE AGENCY**

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#### **IAC-14 E.1.8.2**

##### **Abstract**

The Israeli Space Agency (ISA) was founded in 1983, and it is operating as part of the ministry of science, technology and space. For decades it was under funded, thus preventing the capability to reaching the general public in efficient way. In the last few years, the funding was dramatically increased, enabling ISA to embark on major outreach activities, including the establishment of a new, educational focused web site. The paper will describe the motivation, the needs, and the rational of characterizing the new website, as well as the working process, that involved a team of experts from various organizations and societies.

The author was a leading member of the small team that created the content of the website, as well as its educational products. This involvement, together with 25 years of experience in numerous space education activities in Israel, will provide a wide perspective on the matter, and could help other space faring nations to learn from the Israeli experience, of designing an online outreach mechanism in a relatively short time and on a modest budget.

##### **The Israeli Space Agency at a glance**

The Israel Space Agency's goals include advancing infrastructural research at academic and research institutions; supporting the development of innovative and unique space technologies by Israel Aerospace Industries; cultivating a new generation of space scientists through space education and community projects; and encouraging the expansion and growth of Israel's space industry.

ISA works in partnership with diverse space related industries, including among others, the Experiment and Integration Center, ground monitoring and control stations and remote satellites receiving stations. The development of small and lightweight payload and satellites enables vast usage for scientific exploration and space research contributes to ISA and Israel international prestige, respect and space power.

ISA activities emphasize the importance of scientific research and development and support projects with substantial economic potential. The Agency's goals include the development of new innovative and unique space technologies, to produce and manufacture new lines of products; to create and establish a new generations of scientists in the field of space science and exploration, and support and encourage expansion and growth of related space industries.

ISA's guiding principle is that civilian space activity contributes to Israel's economy, to the country's global status, and to the well-being of its citizens via agricultural and communication applications, the monitoring of environmental pollution, and research. Space research and exploration also inspire and motivate the younger generation to engage in scientific pursuits.

Due to a major budget increase that the Ministry of Science and Technology received in 2012 for space research, the ISA has begun to advance a national space program aimed at enhancing Israel's comparative advantage and placing it among the world's top five countries in the field of space research and exploration.

### **Outreach activities**

Israel Space Agency started to organize a variety of outreach and community activities in 2012. Among the activities was the establishment of the Israeli space week, at the end of January; A series of public activities such as astronomical observations; Space films festival; exhibitions and more. A committee of the Ministry of Science, Technology and Space

decided to create a new website, aimed at children and youth, that will have a wealth of information on various aspects of space, educational materials, movie clips, presentation and hyperlinks to other websites.

### **The team**

The Israel space agency had published a public tender calling for experienced experts on various issues such as astronomy, space technologies and education. After the selection by ISA all topics were covered, incorporating a team which include the chairman of the Israeli astronomical association, the organizer of youth activities devoted to space at the Hebrew University of Jerusalem, a space and cyber analyst from the Tel Aviv University and the author, who is the head of the space research center at the Fisher Institute for Air and Space Strategic Studies.

Each content adviser was teamed with an information specialist, who helped in data collection and writing of the preliminary entries at a special format that was envisioned and refined by the team of content advisers to the Israeli space agency.

A good lesson for any new endeavor of this kind is to check not only what was done at other countries, but to search for private and NGO activities that was done in your country – and of course, to get experts as advisers that are well connected to field activities.

A peer review of the work, on every decided upon stage is mandatory, and one of the first meetings of the group of content advisers was to consolidate the list of academic and industry team of supervisors.

The personal links of each adviser proves to be very good for the team project – each came up with ideas of external experts, archival material that is in the hands of colleagues etc.

### **The work process**

The team, with the community relations advisor to the Israeli space agency held several conceptual meeting, in which the areas to be addressed at the website were discussed.

The team examined various websites of different space agencies (like the well-known NASA's and ESA's), as well as educational space related websites of museums, Institutes etc.

The team came up with more than 20 major topics – and in a long process, decided on the “finalist list” of areas to be covered in the first stage of the website.

For each of the major topics, 30 entries on various issues were prepared, and each of them was peer reviewed by the other team members, and an external panel of experts.

Periodic meetings of the advisers were held at the Israel space agency, in which all the ongoing work was

presented, and the team could exchange ideas and views, besides the extensive use of emails, shared documents etc.

### **The topics covered**

These are the major areas of the new website:

- Earth and the Universe
- Space in Israel
- Satellites and launch vehicles
- Space in daily life
- Space Technologies

As mentioned, each topic was covered by 30 entries, this creating sufficient substance for the website, enabling the users to get a lot of data and information on a variety of topics.

It was decided from the beginning that the website won't be a Wikipedia substitute so each entry was addressed on a different approach than simple encyclopedia entry.

Each entry is displayed in various levels, to ease the use of the site. At the top level, the entry is described in short, and graphics accompanies it; there is a feature in all the topics and entries, titled: “would you like to know more?” - A click on the hyperlink will display another paragraph. Another layer of information is available to the reader if the link “And more” is activated.

Smart search engine is available on the website, as well as dozens of hyperlinks that interconnect entries.

## **Space curricula on the website**

Special section of the website is devoted to a variety of space related materials and curricula, teacher's guides and activities. Some of the issues and topics to be address in this section are Rocketry, Solar Energy, The Moon and planets, Star maps, Astronauts food end more.

## **Movies gallery**

We incorporated several dozen short (2-6 minutes long) movies, on a variety of topics. We got movies (and permission to translate them and use them) from NASA, ESA, and several space industries – from Israel and the US. Again, a selection of the movies was carried out by the team, and a consulting process was applied to the translation. We embarked on cooperation with Israel's education TV channel, and these clips are incorporated on the regular broadcasts of the channel.

## **Original movie clips**

It was decided that the website will incorporate several ORIGINAL short clips that will be produced for the Israeli Space Agency. The team of content advisers was in charge of the ideas for these movies, and provided scientific consultant in the script writing phase and the production of these short movies. These movies ("A day without space", "let's build a home on Mars" and "Israel in space") will be produced on the first half of 2015.

## **Further developments**

The launching of the designated website is planned to late October, early November of 2014. After a period of several months of evaluation (number of visitors, feedback to be received) modification and adjustments will be made.

We will incorporate more entries – gradually enlarging the number of entries on each topic from 30 at the beginning to at least 100; more video clips will be added and perhaps interactive features like quests for young children, coloring pages etc. will be added.

Further thinking is needed to include new medial features in the website, such as Facebook, Tweeter, Instagram, Messenger etc.