



**“Engage and Inspire the European Youth in the Space
Exploration through a Scientific Contest”**



Odysseus Project Final Report					
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1. Final Publishable Summary Report

1.1. Executive Summary

The Odysseus project aimed to inspire the young people to scientific orientation through an educational contest, which would function as a pedagogic and awareness-raising tool. The project enhanced the value of collaboration by its rules and requirements. The Odysseus contest promoted a hands-on science approach that showed to students that space and science could be also fun and relevant to everyone. Furthermore, a community of volunteer teachers and experts on space was mobilised for the organisation of Contest in each country and at European-wide level. In total 621 students 14 – 18 years old and 207 teachers/coaches registered in the contest and at the end 105 teams from 15 EU countries, plus 13 teams from 3 non-EU countries submitted an eligible entry. More than fifty evaluators supported the Contest by assessing the projects submitted by the students' teams. The winning teams of the Contest (22 pupils and 5 teachers) were invited to European Astronaut Centre in Cologne and they presented their projects in the award ceremony, which was held in Space Expo in the Netherlands.

The Odysseus Contest was a journey that taught us that through innovative and interactive pedagogic approaches we could lead European students to find the thrill of discovering space and understanding our world and to encourage them to pursue a career in space.

Odysseus reached out to students through a dedicated web portal that featured information about the project, facilitating the registration and submission of entries. This endeavour is expected to raise interest on science career paths and strengthen science education in school curricula, in addition to furthering public understanding on the three contest themes. More importantly, the Odysseus project published good teaching practices, resources and applications that have the potential to boost scientific literacy and support teachers in assessing student accomplishments in scientific fields. Teachers, on the other hand, were able to use the website as a gateway for novel experiments and projects. The direct interaction with science will finally help reduce gender stereotypes, improve science education and inspire students to appreciate the beauty of science.

1.2. Project Context and Objectives

The EU is promoting a policy with the aim to ensure its leading and significant role in space and in order to maximise benefits to its citizens from space exploration and from the development of space-based technologies. This Space Policy is promoted in the context of the 10-year growth strategy, "Europe 2020", which seeks to enhance the delivery of growth and jobs for the next decade. At the heart of this agenda is the goal of *"smart, sustainable, inclusive growth brought about through greater coordination of national and European policy."* If Europe seeks to be competitive with a leading role in technologically advanced fields, it needs to reinforce the ability to meet these targets; Europe's future prosperity is dependent on creating an environment in which knowledge becomes the cornerstone of socio-economic development.

Young people constitute the vital dynamic societal segment that will make a reality the use of knowledge for building a sustainable and prosperous society. In this context science education of young people is considered as a priority for educational and R&D policies and for European societies in general. Therefore, activities that motivate young people to pursue a career in science are on focus and a priority of EU efforts in the fields of education, space, industry and technology. In this framework scientific educational contests represent highly motivating activities for young students.

Exploration and in particular space exploration has always been an intriguing challenge for mankind. European youth is challenged by Space exploration, which feeds the dreams generated by the Universe and its mystery. More than 8.500 young Europeans completed in 2009 the complex application process to become ESA's astronauts. Awareness raising activities for space exploration need to be designed and implemented, as to stimulate the eagerness of young people to engage themselves in science and in space.

The Odysseus project aimed to engage and inspire the European youth in the "New Frontier", by coordinating and implementing a pan-European Scientific Contest for young people on Space exploration themes, combining creativity, intelligence and innovation.

The project aspired to integrate on-going educational activities on science and space in a pan-European perspective, providing the opportunity for young pupils to co-compete with their peers from different European countries. This action enhanced the concept of multinational cooperation, an element necessary in space exploration field. All participants had to be students between 14 to 18 years old. The students

had to create a collaborative team with up to five (5) members and a coach, for designing, implementing and demonstrating an innovative project in one of the contest's theme categories.

The Odysseus Contest focused on three major space theme categories:

- a) Solar System
- b) Spaceship – global cooperation
- c) Co-evolution of life

The participating students' teams were expected to design, develop and submit their entries in the above themes, related to space activities. These entries had to be creative and innovative in approach and to seek answers to scientific issues.

The Odysseus project had the following objectives:

- To inspire and motivate European pupils in scientific education through an innovative and well-designed Contest.
- To familiarize with and educate the students in intriguing scientific issues, enhancing their eagerness for space exploration.
- To enhance collaboration and educate on its principles the participants in the contest, as the space exploration is a collaborative activity at a global scale.
- To build capacities and develop skills for students with a solving problem approach.
- To create awareness and motivate the community, where school could be the central reference point, in scientific issues.
- To demonstrate effective ways for the creation of virtual communities of learners, students, teachers, museum educators and researchers who would be involved in the contest through the project activities
- To lead to behavioral change for students and the community around them.

The Odysseus project had the vision to diffuse scientific knowledge and in parallel to involve, with a pedagogically "friendly" manner, the pupils in this scientific knowledge. This was aiming to enable the younger generation to become part of the scientific quest for space, by developing their skills and interests towards a scientific career. Space actually was conceived as a mean to stimulate their appetite for scientific knowledge.

The strategy for fulfilling this vision was to inspire and challenge young pupils, through an innovative way, by providing them the chance and the motivation to develop creative projects selecting from three predefined theme categories.

Furthermore, the strategy involved the creation of a critical mass of interested public surrounding and supporting the students in their quest for the prizes of the contest.

The organization and the dissemination of the contest used pedagogic and technological tools with the aim to:

- Motivate the participants: Pupils are more likely to feel a sense of personal investment in a scientific investigation as they actively participate in the research procedure and add and explore their own ideas to their project.
- Develop critical attitude: When pupils get involved in the project's activities they appreciate the power and limitations of an experiment and, as a result, they develop a healthy scepticism about their readings in the classroom and acquire a more subtle understanding of the nature of scientific information and knowledge.
- Make connections to underlying concepts: In the framework of the project's application to the school communities, students were asked to design their own projects. During this procedure, students figured out what things to measure and how to measure them. In the process they developed a deeper understanding of the scientific concepts underlying their investigation of the project's theme.
- Understand the relationship between science and technology: Pupils participating in the project gained hands-on experience in the ways that technology and engineering can both serve and inspire scientific investigation and vice versa.

The contest was organized through several work packages and actions, which produced a series of outputs and deliverables. These individual objectives had the following individual objectives:

- To make the contest enjoyable for the participants, with challenging content and attractive prizes.
- To develop the necessary ICT tools in order to run the Contest through the Odysseus portal, providing easy access and equal opportunity for any student residing in the EU and wishing to participate, regardless of the region he/she lives in Europe.
- To define intriguing scientific educational themes.
- To develop procedures and rules for participation and evaluation that would ensure transparency and easy registration and participation to the contest, and will follow established pedagogic principles.

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- To prepare all necessary technical, administrative and legal elements for the successful implementation of the Contest.
 - To create awareness and motivate the wider public and educational community to support the Odysseus contest.
 - To develop material and resources that would inform young students about space exploration and career opportunities in space industry.
 - To create virtual communities of learners, students, teachers and researchers, who will be involved in the contest activities
 - To involve experienced scientists, practitioners, experts on space exploration and educational professionals in the evaluation process and in the dissemination of the contest
 - To help the teachers facilitate the work of their students and to prepare supportive materials for educators
 - To disseminate the Odysseus contest effectively, as to create a critical mass of registered teams in all EU countries.
 - To organize and complete promptly the assessment of the entries in a transparent and effective way.
 - To reward the effort and achievement of the participants and particularly the winners with an enjoyable and learning experience.

1.3. Description of the main results / foregrounds

The core of the Odysseus project was the organization and successful implementation of the educational contest on space exploration. The main outputs were

- the definition of the key concepts, the scientific and pedagogical content of the contest;
- the development of the rules, the assessment procedures and criteria and all the background and dissemination material, which supported the contest;
- the design and operation the Odysseus web portal, as the one-entry point, through which all activities of the Contest were deployed;
- the administration and management of all processes of the contest (participants' and evaluators' registration and validation, entries' submission and evaluation, nomination of winners at national and European level, interaction with participants etc.);
- the production of all relevant information and learning material for the participants;

The project was structured around two main phases. During the first phase of the project (November 2011 – June 2012) the organizational and technical infrastructure of the Odysseus contest was set-up, in order to provide to all interested in space pupils, the opportunity to participate in the Odysseus Contest, by offering to them detailed information and accessible registration tools and resources. During the 2nd phase (June 2012 – April 2013) all planned contest activities, from registration of participants to winners' selection and award, were implemented in parallel with the dissemination of the Odysseus contest to various stakeholder groups. The Odysseus contest was concluded with the visit of the winning teams to the European Astronaut Centre and to Space Expo, where the award ceremony took place.

The specific results of the Odysseus project are presented below.

a) Set-up of the Odysseus educational contest

The definition of the context and the design of the contest was a very crucial part of the project as it set the foundations and the scene of the project. The aim was to design an educational contest with a hands-on science approach, which would show to students that space is fun, and relevant to everyone. The first step was the articulation of the Concept-Blueprint of the Odysseus contest. This included elaborate definitions of the contest's themes and described the assessment processes and all the necessary organizational and administrative arrangements and procedures for implementing the Odysseus Contest with precision and quality.

b) Participation in the Contest

During the first phase of the contest there were 263 teams' registrations from 26 countries (20 EU and 6 non-EU). Almost half of these teams (124) submitted an entry and finally there were found 118 eligible entries from 18 countries (15 EU and 3 non-EU). The table below summarizes the statistics regarding the participation of individual persons in the contest.

Table: Overall Participation in the Odysseus Contest

	Pupils	Teachers	Total
Number of registrations	621	207	828
Number of participants involved in teams, which submitted an eligible project	429	118	547
Number of participants involved in award winning teams	22	5	27

c) Development and running of the Odysseus Web Portal and website

The Odysseus web portal was developed in such a way that it was the single access point for the Contest, enabling all interested parties to derive relative information, register to the contest, submit their project and communicate with the organizing committee as well as with other contestants. The portal was ready couple of months before the launch of the contest (1st July 2012) and all of its functions were tested and validated. A participation demo was developed before the official launch of the contest in order to test and validate all functionalities of the portal.

The internal area of Odysseus project was prepared and put online in month two of the project, allowing for better communication among partners and for effective organization of dissemination efforts. The project website was released the very first month of the project and since then it had been constantly updated. The *Odysseus* web site and portal were developed in English, but some key parts (e.g. submission of entries, project worksheet etc.) of the Contest, were supported in all EU official languages. Moreover the basic information about the contest was provided in the relevant sections of the site in ten additional languages (Bulgarian, Danish, Finish, French, German, Italian, Polish, Romanian, Spanish and Swedish), while a Google translation function have being integrated in all pages of the website.

The technical and other requirements for supporting the Contest and the implementation of the whole project were defined and elaborated with precision, as they form a key instrument for project's success. The requirements for the Odysseus web portal were derived from and complement the Concept-Blueprint of the Odysseus Contest and the overall needs of the project.

The Odysseus web site, where all information about the project was provided, is active since the first month of the project. Special attention was given to the graphic design of the portal as it is mainly targeting young people aged 14 to 18 years old. The functionality of the portal was of a special focus aiming to provide an easy navigation to all users. The Odysseus web portal running and maintenance required a set of specific activities and is performed constantly, since its launch in 2011. The website maintenance, apart from the technical support, included also the administrative support of the forum and the reply to all questions posed by the Contest participants. The Odysseus web portal was constantly updated with the latest developments of the Contest throughout the project.

d) Drafting the rules and legal terms of the contest

The detailed rules which were followed by all participants were developed and published through the Odysseus website. Special attention was given to implement and align the rules and legal terms to the procedures of the Odysseus portal, making a step-by-step defined procedure. The Contest Rules and the Legal Terms ensured a spirit of emulation, equality and fairness and provided protection to the participants. They emphasized on ingenuity, creativity and skill without unduly limiting the student's freedom of action. The evaluation criteria of the entries were also defined and published in the Odysseus website.

e) Design of the entries' evaluation procedure

Project beneficiaries defined the rules of participation in the Contest and elaborated the assessment procedure, including the specific evaluation criteria, the criteria for selecting evaluators at national and international level and the detailed process for evaluating the entries through the web portal. Detailed legal terms were also developed and were integrated in the process of teams' registration. The assessment procedure and the evaluation criteria were uploaded in the Odysseus website and were reflected in the development of the web portal, which enabled the remote and transparent assessment of all entries.

f) Definition of network and target groups of the project

The main network that was conceived to be mobilized for the implementation of Odysseus contest was the network of national Physical Societies in Europe. The consortium set the parameters and the steps for approaching and involving them effectively. Moreover, they provided the definition of the target groups of potential participants in the Contest and presented suitable ways to engage with them in order to create a critical mass for enrolment in the contest.

g) Handbook on career paths in space

A handbook on career paths in space was delivered, providing information and examples about jobs and career opportunities available in space exploration and illustrating the experiences of people working in space industry. The handbook has been developed with the view to realize the key objective of Odysseus project, which was to inspire students in space related scientific themes, using their imagination and innovative thinking.

h) Supportive Material for educators

A handbook was produced aiming to assist the coach-teachers of participating teams with materials and guidelines that will facilitate them in supporting their teams while implementing their projects. The handbook provides short descriptions on the

Inquiry Based Science Education (IBSE) teaching approach as well as the Resources Based Learning (RBL) teaching methodology that aimed to prepare teachers in setting up lesson plans in order to facilitate their students' efforts and guide them as effectively as possible following modern teaching techniques. The document also includes a series of example educational courses on the themes of the contest which will allow the teachers to understand how they may set up their own lesson plan based on their students selected subject, guide them through their inquiry and facilitate them in producing an appealing and interesting project based on the project worksheet. The document had being made available in English, French, Greek, Italian, Spanish and Romanian.

i) Plan for educational courses

The plan for educational courses aimed to integrate the contest into the activities of the national physical societies. To this end the Plan mapped their activities and made connections to the Odysseus Contest.

j) Dissemination material about the Odysseus contest

An important element of the project was the dissemination of the project and the mobilization of the interest of the educational communities on the contest. This effort was based on the elaboration and implementation of a dissemination strategy, providing for the individual activities, audiences and allocation of resources. Apart from the use of the Odysseus website and social media (facebook, Google Ads, twitter) a whole range of printed and other dissemination material was produced in the context of the Odysseus projects, including videos (in different versions with subtitles in French, Italian, German and Spanish), posters in different sizes and brochures about the contest and about the winning teams. The dissemination activities are presented in detail in the following section of the report.

k) Development of Internal and External Repositories of Project Material

The Odysseus portal provided a repository for all project files. It is divided into two distinct areas, an internal (for project partners) and an external repository. All internal project documents were categorised and filed in the internal repository. The repository for the Contest (external) was assessable by all users and it included all material for the participation in the contest and for informing the participants about relevant resources.

l) Quality and Impact Assessment Methodologies and Reports

The development of quantitative and qualitative metrics and methodologies and the assessment of the quality and of the impact of the Contest, were the main tools used

by the consortium in order to monitor and ensure quality of all project activities and in order to identify and assess the impacts of the Odysseus project.

1.4. Potential Impact – Dissemination Activities - Exploitation

1.4.1. Social Impact of the Odysseus Project

While many of the participants have a powerful story to tell about their experience from the contest, the social and other long term impacts of the project could not be fully assessed immediately after the completion of the project, as they could not be fully seen now or they could be underplayed. However, an effort was made through analysis and surveys for participating students and teachers to gather their views on the contest and on its objectives in order to measure and assess the realized and potential social impacts.

A project like the Odysseus contest can be proved beneficial in many ways for students as it provides an opportunity to increase collaboration between fellow-students and their teachers and could act as a trigger for them to engage in space related activities and even learn how scientific work is conducted by contacting and learning from scientists while working on their project. Such an activity could also help students build on their critical skills and scientific way of thinking. More specifically, the implementation of the Odysseus contest aimed to have an educational and a societal impact by:

- Giving students an opportunity to work on challenging scientific questions and familiarize themselves with the work currently done or planned at national and international space agencies and create their own projects with subjects similar to the ones that scientists are currently working on as well.
- Encouraging European pupils to find the thrill of discovering space and to pursue a career in space industry.
- Building on communities, promoting and enhancing the collaboration between teachers, students and practicing scientists. In an effort to expand the learning environment beyond the borders of the school and the school classroom, teams were encouraged to communicate with practicing scientists so as to gather information and comments about their project and also to advertise their work to their local community.
- Contributing in the use and advancement of modern pedagogic and learning practices and by giving the chance to teachers to explore new ways of interacting with students.

- Raising public's awareness on space exploration and on the need for global cooperation in the field of Space, which represent an important challenge for humankind.
- Developing a better understanding of students, teachers and the wider public on issues connected to our solar system, the co-evolution of life, and on global co-operation for building spaceships and space missions.

Many aspects of the aforementioned intended impacts are already visible and could be documented by the statistics of the contest and the feedback provided by the participants. More specifically, with regards to the students overall idea about the contest, the vast majority (90.08%) stated that they have enjoyed a lot their participation in the contest and only 9.92% said that they have enjoyed their participation a little. This positive reaction to the contest is also enhanced by the fact that 80.99% of the students indicated that they want to learn a lot more about science and space. Furthermore, according to finalists' opinion the key to success is teamwork. Most of the teams who made it to the final round stated that the main factor of their success was the fact that they worked together and organized their work effectively. The creativity and originality of their projects also seemed to be a factor of success for finalists. The finalists' answer in the question "*What was your favourite part of the contest?*" can give us an insight into why students in general have stated that they enjoyed the contest. Almost all teams' answers were strikingly similar and they stated that the favourite part was their project itself and the process of doing research, making experiments and retrieving information. It should be noted that for the majority of the students, who participate in the contest, the two most valuable assets of the contest was that it encouraged teamwork and that it allowed them to use their imagination and creativity and learn about space exploration in a fashion that suits them most.

The fact that most entries proposed new ideas on future or existing space missions is an indication that the participants had the chance to work on challenging questions and familiarize themselves with the work currently done or planned at national and international space agencies.

The survey also showed that students have being able to work on topics of their own interests and that they felt that through their participation they improved their time management, collaboration and inquiry skills. Most of the participants confirmed that they had the support of fellow teachers, the schools' administration and on occasions of the local communities. Winning teams have also stated they received small grants or gifts as a reward for their distinction by the local community and that

their success attracted the interest of the local post. This is also an indication of the relatively high public awareness of the local communities on the contest and on space exploration in general.

The participants have also stated that the contest has helped them in developing their critical thinking skills and collaborated with colleagues and fellow students. Teachers on the other hand have stated the contest has given them the opportunity to work more closely with their students and practice more with the inquiry teaching approach. 41.32% of the participants stated that they came in contact with scientists (mostly from local universities and institutes) and interacted with them in order to receive information about their project.

Participation in the contest proved that encouraged students to follow a career in science and in space industry. When students were asked if they are considering a career in science upon registration 61.88% of the students said "Maybe", 31.68% said "Certainly" while a percentage of 6.44% declared they were absolutely not thinking of a scientific career. The students' answers on the same question after the contest have changed towards most positive responses. The students' percentage saying "No, absolutely not" has decreased to 4.13% and student who said "Maybe" has also dropped to 51.24%. On the contrary, students saying "Certainly" have increased by 13% reaching 44.63%. These results indicate that the Odysseus contest has affected positively many students, who before were undecided about choosing a career in science or not.

More importantly, the Odysseus project published good teaching practices, resources and applications that would boost scientific literacy and supported teachers in assessing student accomplishments in scientific fields. Teachers, on the other hand, were able to use the website as a gateway for novel experiments and projects. The direct interaction with science is expected that would finally help to reduce gender stereotypes, improve science education and inspire students to appreciate the beauty of science. The experiences of the participants in the Odysseus Contest, as these were collected and analysed after the contest showed that through innovative and interactive pedagogic approaches European youth could find the thrill of discovering space and understanding our world and would seriously consider a career in space industry.

1.4.2. Dissemination Activities

Dissemination of the contest was central for the Odysseus project since it was a key element for attracting participants and for achieving high educational impact. After

the finalization of the overall dissemination strategy a wide range of dissemination activities was implemented.

A number of different dissemination methods and means were utilised in order to widely publicise the contest and inform the participants and other stakeholders on the project outcomes. The main dissemination activities¹, which were carried out in the context of the project were the following:

- i. Design of the project logo.
- ii. The design and constant update of the Odysseus contest site (www.odysseus-contest.eu), which was used as a tool for disseminating information about the contest to both the educational community and to the wider public.
- iii. Networking and contact with space agencies (ESA, DLR, UK Space Agency, CNES), school and educational networks and science associations in order to promote the Odysseus contest.
- iv. The creation of a facebook fan page, twitter account and YouTube channel for the Odysseus contest and the constant use and update of them. Creation of web banners for using them in on-line campaigns.
- v. Run of a facebook campaign promoting the contest to highly targeted pupils (14-18 years old) that were residents in EU countries and that like space or physics.
- vi. Run of a Google Adwords Campaign. The campaign targeted through the Google Display network and Odysseus ads were grouped into different Campaigns that contained more than one sub-groups of ads (ad groups), using demographic targeting, wherever possible, in order to target specific age groups (14 to 18 years old). This campaign included themes campaign (e.g. Student contests, contests for students, pupils, Space exploration, Astrophysics, Physics etc.), Interest – based campaign (target audience according to interests range, such as Astronomy, Science in General, Engineering & Technology, Physics, Scientific institutions) and You Tube campaign.
- vii. Production of a promotional video on the Odysseus contest and on how students could get involved. The video was produced in English and versions with subtitles in other languages (French, Spanish, Italian and German) were also produced. The video was uploaded on the project web site, on YouTube and on the facebook fan page of the Odysseus contest.

¹ A detailed list of activities is presented in the Dissemination activities Report

(http://www.youtube.com/watch?feature=player_embedded&v=WkmmzYt-izY)

- viii. Development and run of a website in Greek for the participants from Greece (<http://odysseus-greece.ea.gr>)
- ix. Design and publication of the project leaflet in English (the leaflet was also made available in Greek).
- x. Design and publication of four posters (in different sizes) and translation of the main Odysseus poster in all official EU languages
- xi. Letters to the Ministries of Education or Ministries of Youth of the 27 EU Member States
- xii. Issue of press releases about the launch of the contest and the announcement of the winners.
- xiii. Presentations of the Odysseus contest in the context of educational workshops, fairs, conferences and school events.
- xiv. Presentation of the Odysseus contest during teachers' Summer Schools (Crete, CERN - Geneva)
- xv. Information and mobilisation of national physical societies in Europe by EPS
- xvi. Publications about the contest in newsletters, websites, magazines of educational organizations, networks and popular press.
- xvii. Direct contact and invitation of scientific and educational organizations to further disseminate the Odysseus Contest among their members and stakeholders.
- xviii. Design and publication of the leaflet presenting the winning teams in English (the leaflet was also made available in Greek).
- xix. Creation of links and dissemination of the Odysseus contest through the Open Discovery Space project

1.4.3. Exploitation of results

From the various deliverables, which have been developed during the project course, as directly exploitable products the following are envisaged:

- Various projects of participating teams, which include text, videos, animations, experiments, websites, etc. that could be usable by teachers and students, in the context of their learning activities on science. Furthermore, educational authorities or space agencies might, also use the projects that have been reviewed as creative and / or innovative by the evaluators, as a pool of ideas for the realization of educational or scientific projects on space exploration.

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- The concept and the model of the Odysseus contest as a pedagogic tool for engaging learning communities and for transferring knowledge on science and space exploration.
 - The *“Odysseus Handbook on Career Path in Space”*, which provides brief descriptions of occupations that are directly connected with space exploration, as well as interviews from leading professionals in space and descriptions of space summer camps and summer schools that students may be interested in learning about.
 - The *“Supportive Material for educators”*, which contains short descriptions on the Inquiry Based Science Education (IBSE) teaching approach as well as the Resources Based Learning (RBL) teaching methodology that aims to prepare teachers in setting up lesson plans in order to facilitate their students’ efforts and guide them as effectively as possible following modern teaching techniques.

In many EU countries exist policies for promoting science education and all national space agencies implement educational and awareness raising activities. The products included in this deliverable focus to those organizations that can direct their educational and communication activities, like for example the UK space agency, towards the organization of science fairs, competitions and space summer schools for young students.

The products developed in the project have been presented within various dissemination activities realised during the one and a half year of its life and a real interest has been shown by ESA, other space agencies and some national physical societies and educational authorities to enable and improve the interest of young people on space exploration.

Some options for the immediate exploitation of the Odysseus are the following:

- Repetition of the contest along the same lines and by using the on-line platform and the material (rules, criteria, information, procedures etc) developed in the context of the project.
- Partners are investigating the possibility to link the Odysseus project to the educational and awareness raising activities of ESA and national space and astronomy agencies to make the material and the creative projects developed by students more visible across Europe, promoting students’ achievements and facilitating their engagement in space related activities.
- In order to transfer the basic idea of the Odysseus project in official practice, the ODS project has planned to perform a test and a subsequent development of the social-network style on-line contest, which could serve as a prototype to be adopted by stakeholders in school education, in

collaboration with national and local authorities, experts and educational professionals.

- The Odysseus virtual communities created in several countries (e.g. Greece, Romania, Hungary, Belarus) could be used to expand opportunities for teachers' professional development, including helping teachers to think differently about learners and learning and to reduce the barriers between students and teachers as learners. The teams, which were involved in the contest activities could continue their collaboration with schools, museums and researchers in order to help students to develop critical capacity and deeper understanding of the concepts underlying scientific investigation.

1.5. Website of the Odysseus Project

<http://www.odysseus-contest.eu>

1.6. List of Beneficiaries

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