

Ómega – The Emerging „Cosmic Orientation”

Author(s):

László Z. Karvalics, BUTE, Information Society and Trend Research Institute, Department of Information and Knowledge Management, zkl@itm.bme.hu

Budapest-Szeged, 2007

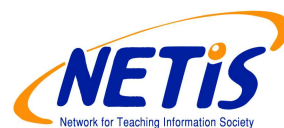
Publication of this report is supported by:



Education and Culture

Leonardo da Vinci

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use that may be made of the information contained therein



Content

Abstract 5

From the „digital skin” to an ultimate global network? 6

Terraforming: a narrative appears 8

Science and terraforming 9

Technology and terraforming 10

Arts and terraforming 11

Cosmic orientation as post-global identity: the revolution of imagination and
extended activity 13

Information Technology, cosmic orientation, media 15

Europe, the ICT and cosmic orientation 16

Abstract

In the information society through our use of Information Technology the following three processes are simultaneously in operation: human kind's expansive understanding, our measurement of human knowledge about the World and our ability to alter our environment. One of the main attitudinal problems of the information society is what the events of the following 20-25 years will prepare. For the time being, this issue is dealt with by the classics of science fiction, the Star Wars and the Star Trek Universe, and the space-catastrophe movies of increasing number, not by the divided scholar society. It is time to start thinking about these things in a different way. Also for the present moment these discourses seem to be futuristic, and will in the near future not become the building blocks of everyday reality, ever greater numbers will be debating and researching these subjects in ever greater depth. We will also observe ever greater overlap between information technology and space research. For Europe the source of competitive advantage is not only the engineering feats of space research, but the success of the popular acceptance of the cosmic orientation

Keywords

Global, planetary, cosmic, space research, information and communication technology, technology, identity, arts, terraforming, evolution, Europe

From the „digital skin” to an ultimate global network?

„I believe that space activities are impacting society through... reduce the World to the dimensions of Man, expand Man to the dimensions of the World... The new frontier is not so much Space but Man himself.” (Dr. Jacques Arnould, French Space Agency (CNES))¹.

According to the forecast of the Swiss EMPA’s research group led by dr. Lorenz Hilty¹, there will be **about one billion electronically connected devices at the disposal of about one thousand million people in ten years’ time**. According to other estimations, **in twenty years the world will have a hundred times more computers** than we have today, and **each of those will be of a hundred times bigger capacity** than today’s computers. Computers will be present in our games, books and clothes, under our skin and in numerous fields of our lives, nearly everywhere, and **their connections will be a hundred times faster than today’s connections**. Once, Bill Gates called this the “digital skin” covering the Earth. However, Sir Tony Hoare, former professor of Informatics at Oxford, now researcher of Microsoft’s laboratory in Cambridge, looks even further²: he says that **some time the world will make the part of an ultimate global computer network**, and it is high time to start thinking about the principia of the engineering plans necessary for its construction, about its compromises and technical risks, and to get ready for the trip into **the empire of non-classic informatics** during which, we have every reason to hope, newer and more suitable devices than today’s computers will be built.

Though, we do not have to wait until years to recognize that the development of informatics is tending towards global sizes. The Internet itself is the metaphore of the global community network, and the **computing capacity, too, is bombarding the global system size**. The great sensation of 2002, the Earth Simulator, which is the super-computer of 35.61 teraflops computing capacity and was built in the Maritime Science and Technology Centre in Kanagawa, is used by Japanese scientists in the **examination and simulation of the climate changes on the Earth**.³ And the next challenge is taking shape: the mass of data possible to be gained/ produced about the terrestrial natural and eco-system is so far in **quantity from that represented by the mass of signals arriving from the gigantic cosmic space surrounding the Earth**.

Could it be by chance that the first real giant-system of the today so fashionable GRID-architecture was created owing to exactly this? In 1999 „faced with 50 terabytes of information to analyze, Berkeley’s SETI team eventually turned to the public for help, which ultimately led to the launch of SETI@Home... As of May 2002, **over, 3,725,900 registered users** were participating in”.⁴ However, SETI’s millions of computers connected in a network make only a start.

¹ <http://www.empa.ch>

² The ultimate global network (Richard Arsons reports) 07 January 2004 <http://news.independent.co.uk/digital/features/story.jsp?story=478649>

³ The dawn of computer science, when the machines were used in fire control equipments, has faded away. The next-generation-computers will try to penetrate into the chaotic processes of the atmosphere and the weather.

⁴ Together they analyzed approximately 510,744,000 work units. This translates into roughly 983,487 years of CPU processing time (a computer year is the equivalent of one computer working continuously for one year). Skawinski, Kamil Z. : IT & SETI: The Role of Computer Technology in the Search for Extraterrestrial Intelligence <http://www.ccnmag.com/index.php?sec=mag&id=156.0>

Hugh Kieffer, a Mars veteran, who has been studying the planet for almost four decades, considers the bounds lying in the processability of the data mass, and not in its production. „New data – whole new types of data – are accumulating faster than researchers can make sense of them. The result is something like an optical illusion.”⁵

To avoid this time called the „period of maximum confusion” by Kieffer, science needs a real Copernican turn–about. This is **the connection of brains into problem solving mega-machines.**⁶ Even today, the events that will become dramatic in the next 20 years are obvious: the small group of astronomers, backed by however great amount of computing and picture converting capacity, **is not able to follow the astoundingly grown signal production with analyzing intelligence.** To make data of the signals and new knowledge of the data, a new kind of „interface” will be needed: the millions of the students and amateurs being at home in the world of stars, who will become the partakers of a new collective scientific adventure more exciting and interactive than ever. They will be able to: their information store and communication channel, the Internet, will answer even greater challenges.

This is the point where the future of information technology (the millions of “human interfaces”) meets the future information society which is necessarily oriented more and more at the cosmic space surrounding us.

⁵ Norton, Oliver: Mars revisited National Geographics 2004 January p.9.

⁶ Lewis Mumford’s half-a-century old term is more actual now than ever.

Terraforming: a narrative appears

In October 2001 Stephen Hawking, Professor of Mathematics at Cambridge University, gave an interview for Daily Telegraph which stirred up a storm. The world-wide known cosmologist ventured to say that **in case human kind does not populate other planets and does not spread in space, it will probably die off, since there are too many accidents threatening life on one single planet.**

Many of the scientists evaluated Hawking's words as 'rumour-mongering', and were anxious to contradict their colleague.⁷ Even a magic number was mentioned in this debate, namely someone estimated the time necessary for human kind to expand the terrestrial civilization to the Galaxy to be three hundred million years. If it had a head, the bacterium called *Deinococcus radiodurans* would surely have a headache now: the protozoon having „specialized” in extreme environmental conditions has just been about to transform the inhospitable surface of Mars. And although it is perhaps still too early for would-be planetary travellers to begin packing, several NASA-scientists are of the opinion that the „notion of terraforming”, of making similar to the Earth, has recently evolved from pure science fiction to theoretical possibility.⁸

Of course, Hawking and the *Deinococcus radiodurans* have not been left alone. The report of the *Gulbenkian Committee*, the renowned scholar board, is of a similar opinion: The finitude of the Earth, too, incites „*the discoveries that are inevitable in the expansion of our domination and are tending more and more upwards and outwards... our present habitation does not seem a domestic point of departure any more, but a launching site from where we scholar men (and a few numbers of scholar women) can fly up to space creating a control point above a more and more cosmic unit.*”⁹

The New Space Era, bringing about satellite revolution and space mining will provide the know how to move out of reach and migrate other galaxies.¹⁰ Of course, we do not know when and how space-expansion will become reality. (Future may even prove sceptics, but it would be rather surprising to see their current arguments proven.) However, if we consider terraforming and space-colonisation as logic and possible scenarios, we will become able to see familiar symptoms and processes in a very different way. As for now, it is enough to involve these into the group of aspects to be or possible to be examined. However, it is desirable to gradually divert attention from the noise of space-research news transmitting daily headlines to the mysterious silence of the dilemmas that human kind, the outstandingly important role player of the Universe, will have to face: in the followings we will call this slow „dipping” of public cogitation the '**cosmic orientation**'.

Thus in case we accept cosmic orientation as a vision, having happened earlier and happening now, its prologue becomes possible to be construed. Using the chosen example, terraforming, in the followings I wish to illustrate the opinion that *science, technology and even arts are possible to be described as the quality tending towards this (final) state.*

⁷ This offense is weirdly similar to David Lasser's case who published the first serious book on the subject in English (The Conquest of Space, 1930), and lost his job because a US Congressman said that anyone who wrote about travel to the Moon was obviously insane. (Cyrano de Bergerac, author of 'Moon Travel' was probably turning in his grave...)

⁸ See: Rebecca Soal Slotnick's report: American Scientist March-April 2000 <http://www.americanscientist.org/issues/Sciobs00/sciobs00-03extreme.html>

⁹ Open the Social Sciences: Report of the Gulbenkian Committee on the Restructuring of the Social Sciences (Mestizo Spaces, 1996).

¹⁰ Graham T. T. Molitor, the well-known future researcher, tries to be even more precise in his economic political(!) forecast: „*The extraterrestrial enterprise will become the main engine of economic activity some time prior to the year 3000, perhaps as early as 2500*”. Emerging economic sectors in the third millennium: the new space age 2500-3000 Molitor, Graham T.T.: Foresight, Vol. 3. No. 3. 2001, pp. 219-229.

Science and terraforming

The disciplines that co-operate in the understanding of the „operation” of the Earth and the terrestrial ecosystem are getting closer and closer to each other. Geology, meteorology, volcanology, oceanography, the sciences dealing with seisms and the earth, life sciences and material sciences (just to mention a „smaller” group) in the foreground, and the „basic sciences” supporting these from the background (physics, chemistry, and arithmetics and mathematics providing computation capacity and algorithms) – are getting closer step by step to the better understanding and description of extremely complex systems.¹¹

All the knowledge and experience produced in the course of this process support the chance to alter intervening, in favour of treating climate changes, the weather and the natural disasters, towards transformability which is necessary for sustainability. At the same time, it is the „scientific occupation” of the Earth that opens the road in front of the terraforming of other planets, as well: this knowledge is actualized by the even greater venture opening the way from the dimensions of understanding and forming to the never-ever seen quality of creation. As a paradox, it is more than interesting to have a look at the devastating capacity that has been developed by the nuclear scientists and the politicians and military supporting them (and the „overkill” of which shows us how many times the Earth could be perished by using these capacities.) Considering all these from the aspect of cosmic orientation, we will rather see the development of the capacity that may provide the power necessary to confront the small planet and meteor threat coming from the space – after all, one of the pledges of the ability to affect the material and energy processes on a planetary scale which is terraforming.

¹¹ Note: space research has greater and greater contribution in the cognition of Earth (too): satellite observations and their combinations have already enriched science with numerous new recognitions.

Technology and terraforming

China is entitled to be proud of its latest giant dam: by some experts the realization of the gigantic building inaugurated in 2003 is, by reason of the amount of built-in material and the volume of the water „made controllable”, considered the biggest direct and deliberate nature-transforming project of ever times. Considering the Aswan-dam, the embankment of the Netherlands or some other earlier top achievements we will find a common characteristic which lies in the fact that they all integrate the technological part systems developing both separately and connectedly. Traffic and transport, communication, informatics, the physical, material and energy systems of space and object forming unite into one super system in favour of the common aim, the giant surface transformation.

Let us place the question like this: what size might the greatest supersystem capable to evolve in close connection with the systems of cognition be? And let us recognize: in case the answer is terraforming, the magic transformation of the planets into habitable eco-systems, we are marking out the organic size-limit of the future successors of the nature-transforming projects realized so far.

Technology component	The „giant system”
Life technology	Global eco-system
Traffic-transport, communication	Interplanetary ¹²
Space and object forming	Planet surface and climate
Informatics and automatization	Planet modelling on supercomputers
Energy	Total input energy demand of the transformation „project”

It is strange that during the latest decades of space research the technological germs pointing directly towards the future super system have already been created. The Earth-Mars communication is maintained by the TCP-IP protocol, and the sending of the Moon and Mars Walkers and the pieces of rocks gathered or shifted by the machines mean that we have stepped over a psychological border: the era of interplanetary physical interventions has started.

¹² The world history’s very first telephone call initiated from space took place on 11. February 2001. Marsha Ivins called the flight control centre directly with Cisco’s IP SoftPhone device from aboard of the Atlantis space shuttle.

Arts and terraforming

Csaba Varga, the world famous animation director has recently published an interesting book in Hungarian.¹³ He created an art typology which categorizes the compositions taking objective-physical form along the three dimensions of expansion and the fourth dimension of the time co-ordinate. He has found something very strange: one place in the developed 8-element system is still empty. What sort may the missing „eighth art” be and what is it?

The author states that we cannot give the answer (the evolution of cinematic art would have been very difficult to predict at the end of the 17th decade), however, the inner logic and the historical dynamics of the system helps us making statements in connection with some of its future characteristics. Half a dozen, exactly.

1. „This absolutely unknown branch of art does not – in its objectivity – postulate any unknown things out of the everyday dimensions.” That is why „we have the opportunity to catch sight of the precursors of the 8th art”.
2. „We cannot doubt that the natural laws themselves may be the tools of art.” The cultivators of the 8th art will primarily have to ask the theoretical and experimental physicians to co-operate, since they will strive to use the deepest laws of nature.
3. The industries having organized around the new art branches have always been of an increased size: the next one will be many times bigger than the most complex so far, that is film industry (including the number of staff needed for the creation of the composition).
4. The new dimension conforms to a new „message”. The intellectual reach of the 8th art will be different, just like film is essentially different from the other, earlier arts.
5. Computers will play a central role in „bearing” the 8th art and in its opportunities, and computer industry will invest great amounts into this type of development.
6. Each internal point of the 8th artistic composition will include a definite information content, the composition will be „a spatial picture which is capable of changing and possible to be controlled to the quick (to the atoms)”.

Relying on the above, **the 8th art may not be anything else but terraforming**¹⁴ – the description is weirdly precise. The new artistic quality, which, to some extent, takes after horticulture, sculpture, architecture, painting or the cinematic art as well, and where the composition is the transformed reality itself, does not merely connect Art with Science and Technology, but also makes the process of creation a giant performance.

It is very interesting that artistic movements tending towards this direction have strengthened from several directions at the beginning of the third millennium. The literary works (or film adaptations) turning to imaginary terraforming have found subsidiaries in the painters and animation artists who are trying to present the astounding colour and form commotion of imagined universes, planets, sun-rises, moon shadows and cosmic storms – as a part of the known artistic forms of expression of today. Or let us think of Christo by means of whom the physical extension of artistic work began to take unprecedented sizes (just to mention the island made heavenly).

¹³ Csaba Varga, 2000: Discovery of the 8th Art. Odyssey in the Universe. (A 8. művészet felfedezése. Kalandozások az Univerzumban.) Árnyékvilág series II. Minores Foundation, Fríg Press, Budapest.

¹⁴ It is strange that Varga himself does not conclude this hypothesis, and searches the answer somewhere else.

The architect Charles Jencks makes the missing theoretical step in this direction.¹⁵ "If **architecture** must be oriented to nature and culture; then it **must have a larger orientation: the universe as a whole.**" He puts a name to this cosmic orientation, "cosmogenic architecture." Architecture informed by the structure of the cosmos itself.¹⁶

¹⁵ Jencks, Charles: The Architecture of the Jumping Universe Academy Editions, 1995.

¹⁶ Somers, Eric: Architects and Technology <http://www.sandbook.com/dmtexts/dm1-3.html>

Cosmic orientation as post-global identity: the revolution of imagination and extended activity

We have dealt with terraforming as an illustration: we wished to demonstrate that the known social phenomena suddenly become possible to be interpreted from a very different aspect if they are considered from a surprising point of view.¹⁷ Human kind has lived together with the world of the stars for millennia, but the time to see ourselves not only as terrestrial, but as cosmic beings as well has arrived only now that a real global quality is taking shape.¹⁸

The most outstanding persons of the history of ideas always found the stake in total quality, in thinking about human kind when facing personal fates and particular situations. The „higher” level, where the absolution comes from and that gives frames and sense even to the ostensibly hopeless, was always possible to be found. But where should we search this higher domain now that the global identity has formed and seems to be becoming solid? What is there above global?

Let us not forget that the particular communal dimensions have always been connected to an activity space of certain size.¹⁹ Starting from the living-space of some square kilometers of the early communities, through the discovery-like conquering of the space between the continents, a real global-size system evolved only in capitalism. It is obvious, however, that the activity space is expanding again, the leisurely Moon-walkers have extended the sphere of personal presence, and the rapid sounds and the silent space telescopes are enlarging the reach of cognition day by day.

Interestingly enough, this process and the widening of horizons concluding from that are on the periphery: excluding those concerned in space research, science is more and more sceptic, and politics and pedagogy stay absolutely unaffected. Gagarin’s journey was observed breathlessly by hundreds of millions feeling that something emblematic was going on, but later the new results and the tragic accidents were unobservedly „arranged” amongst the average media headliners.

Nevertheless, it would be high time for public cogitation and the educational system to include²⁰ cosmic orientation amongst its topics unless they want to let the total field for science fiction. We must be aware of the fact that the detailed work of attitude forming has been done by the Star Wars and the Star Trek Universe and their epigons for a long time now. Of course, the wakening moral panic attacks these offsets of literature and cinematography from the aesthetic side, not even registering that the essence is not the form but the content. Namely, the patterns of cosmic orientation enter the minds of the growing generation with unobserved

¹⁷ There is an opinion, and it exists in life sciences, that is even more considerate: **the error of a lack of cosmic orientation** in biological and comparative-morphological considerations still exists, inasmuch as a descent to the inmost basis of life is neglected when dealing with issues which necessitate a holistic viewpoint... Enderlein, Günther: The Nature of the Biological Uniformity of the Bipolar Structure of all Chronic Diseases <http://www.professorenderlein.com/Bipolar.html>

¹⁸ Of course, the pioneers did not wait as long as this moment to tell that the road of human kind leads out to space: Teilhard de Chardin’s vehement metaphor titled ‘Omega-point’ (which appears in the title of this text, as well) will soon celebrate its centenary.

¹⁹ As Joel de Rosnay writes: „Identity is born of a new relation of time and space”. Information, Networks and Identities (with Manuel Castells) in: Keys to the 21st century (Ed. By Jerome Bindé) UNESCO Publishing, Paris – Berghahn Books, New York – Oxford pp 219-223.

²⁰ The appearance of cosmic orientation in pedagogy is connected to Maria Montessori: she saw the child “as the one cosmic agent through which our full progress as human beings is possible”. The psychologist Lawrence Kohlberg described morality as a cognitive process. **It was Lawrence who first introduced the notion of „cosmic orientation”** in his famous seven-level moral model in the late 70s. „Stage 7: to be true to universal principles and feel oneself part of a cosmic direction that transcends social norms”. Kohlberg, Lawrence: *Found in Psychology and life* 10th ed. Philip Zimbardo Scott, Foresman and Company, 1979 p.245.

naturality: the self-evident space journey, the endless want to discover the space, the search for life-symptoms and foreign civilizations and the improvement of security against cosmic threats.

In the world of the partly nominal and partly incapable international organizations it is not yet clearly seen that the „logic” of space may help us **overcoming the current economic-political deficit** appearing in a similar form on a national, international and a global level.

Arjun Appadurai²¹ deduces the present conflicts and those expectable during the next 20-25 years from the concept of cultural uncertainty. According to him, it is because of uncertainty, the inevitable and tradition-controlled distinction of the 'self' and the 'other', that our era is, almost exclusively, represented by 'opposed identities'. 'Predatory identity' is opposed to 'victim identities', and this dividedness grows stronger in each crisis situation. (That is why the identity-problem is so closely connected to modernity and globalization.) Appadurai takes the „large-scale group identities that seem to require – as a rigid requirement of their sense of honour and security – the restriction, degradation or outright elimination of other identities”. The solution, he says, is „to delink ethnicity from diversity”, and to strengthen the multicultural characteristics.

This, however, is not enough: **a unified identity replacing opposed identities cannot be based on anything else but the cosmic orientation built on the consciousness of planetary unity.** Cosmic orientation means **a new kind of co-operativity and consensual decision-making,** and is **against the information monopoly and dispossessionability:** if nothing else, this is a good reason why it should have long been **planted into the curriculums, public cogitation** and the hearts. However, it seems that we still have to wait – but hopefully, for not too long.²²

²¹ The New Territories of Culture: Globalization, Cultural Uncertainty and Violence In: Keys to the 21st century (Ed. By Jerome Bindé) UNESCO Publishing, Paris – Berghahn Books, New York – Oxford pp 136-138.

²² Typically, this interconnection was not worded by a scientist, but a novelist, in relation to the newest sensations of the Mars-research. “When we move to the Mars, we will leave all the terrestrial hatred behind. **We will get a new chance for peace, development and the trial of our imagination.**” Telephone interview with Ray Bradbury in the Hungarian daily Népszabadság (29, Jan., 2004) pp. 1-2.

Information Technology, cosmic orientation, media

As already pointed out, **cosmic orientation** is getting stronger by the benisons of information technology, but at the same time, it is **one of the greatest powers pushing information technology towards permanent innovation.**²³

It is not a chance that more and more of the owners of the (mainly American) top companies in information technology invest a considerable part of the profit they gain **from the IT sector into space research.** Jeff Bezos, the owner of Amazon.com and the developer of PayPal electronic paying system and the Zip2 software, and John Carmack, the founder of id Software, the producer of the Doom and the Quake cult games, are both building private space-ships, as well as the co-founder of Microsoft and ex-supporter of SETI programme, Paul Allen. They are already aware of how information technology enriching space research may more and more strongly be connected to the media also using information technology in reporting about the results. The photos and the short-life surface adventure of the Mars-walking Pathfinder and those of its little brothers, Spirit and Opportunity, became **one of the most popular media events on the Internet.** Luna Corp., which is the planner of the Lunar Mission, rounds off its business plan from promotion incomes. All these are now called 'the new craze of new economy'²⁴, but what will actually happen when the first asteroid-miner derrick starts working (it is already being built), or when the live broadcasts from the extremely exciting satellites of Jupiter begin (some of the sounds are already on their way)? **The boom we are facing is similar to that brought about by the dotcom-revolution in the mid-nineties.**

²³ Let us add: this has been true since the birth of astronomy. Let us think of Tycho da Brache: the great astronomer of Uranienborg became the pioneer of information management when he collected the astronomic observations on standard forms from all over Europe.

²⁴ Arpad, Bak: Space competition of IT companies (In Hungarian) Piac es Profit, Nov. 2003, pp. 60-64.

Europe, the ICT and cosmic orientation

The Earth Simulator super computer is Japanese. The reawakening SETI and the scientific programme of terraforming is American. Following Russia, China and India, Brasilia is also about to enter the group of space-powers. With one or two innovations and its own space –programme **Europe is able to keep up to some extent**, but how could it compete the **enormous resources spent on the investments** by the more and more competitors together?

To strengthen its positions, Europe must choose other ways out of the presence in the direct competition-field. Finally, I present here again the ‘correspondence’ that relates the IT development to cosmic orientation, and then shows how Europe can enter the opening strategic space.

It is widely known that it is more and more the intelligent agents, that is clever algorithms, that look for the relevant elements in the excessively increased mass of data, and transmit these to the users. The newest technologies are concentrated around **collaborative filtering and ontology making** but are, despite their promises, limited. There must be an increasing number of – as we formerly called them - **human agents** sitting at the terminals of data so that they can, in possession of non-algorithmizable knowledge, evaluate and transmit the conclusions gained from the data flow. As the mass of signals, produced in real time by the computer systems making the “digital skin” of the Earth and arriving from the space on various channels, is growing, the possibility to follow this growth with ‘natural intelligence’, too, becomes more and more important. How are these auxiliary forces ‘born’? They become interested in these activities, and they are happy to spend some of their time on this kind of activity, may as well voluntarily. How do they become interested? The educational system on the elementary and intermediate level, the forums of the propagation of scientific knowledge and the media must be deeply penetrated by cosmic orientation. Anyone having met terraforming as a scientific and artistic programme in his/her early years, will later be **predisposed to offer his/her own knowledge and creativity in various forms for the community space of the people of similar interest**. The competitor who is able to relate the new forms of computer-mediated communication (CMC) to the **more and more co-operative knowledge production** of space research, and so becomes the **‘hub’** of the worldwide research programmes, will take a big step forward.

Separate notices will not be sent out: these processes have already begun, it is high time to pay attention to them! The children's art contest organised by the *Norwegian Space Centre* in co-operation with EURISY²⁵ and UNESCO expects pictures responding the following questions:²⁶

- Can we live in space?
- How will people live on other planets?
- Will you ever move to another planet?

You need not draw a picture, but can you give the answers, dear Reader?

²⁵ The Eurisy Association (<http://www.eurisy.asso.fr/>) was founded in 1989 as part of **Europe's preparations for International Space Year (ISY-92)**. In 1993, the Association's members decided that EURISY should continue its work, given that raising public awareness of the value of European space activities was a long-term task requiring an extended effort. One of the main aims is to inform secondary school pupils and university students together with their teachers on the interest of space activities in Europe, as much for the advancement of scientific knowledge as for their practical implementation in everyday life and the socio-economic development of which they will be the actors and the beneficiaries; Direct secondary school pupils, university students and teachers towards international exchanges, and group work using the new information technologies. In total accordance with our thoughts, their one-day symposium, organized in Vienna, Austria on 10 June 2003, was titled Literature and Arts in Space, and their Colloquium in 2004 is entitled Space Communications for the Information Society.

²⁶ The older ones are to write an essay on how world space makes our every-day lives more perfect and how it contributes to our social, economic and cultural development. They can give a futuristic description of the role they think world space will play in the near future's society.

¹ On the pages of www.spaceandsociety.org well-known and popular people continue the sentence starting with „I believe that space activities are impacting society through...”