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The KEO satellite

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THE KEO SATELLITE

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SUMMARY

To be launched in 2001, the KEO satellite will return to Earth in 50,000 years' time to deliver to future generations a collection of messages from the world of today.

Endorsed by the European Space Agency, KEO brings together partners from the aerospace industry who have demonstrated the project's technical feasibility and will work on its realization. Since KEO is being achieved solely through gifts in kind, all partners are voluntarily giving of their time, skills, services and materials. They include Aerospatiale Matra, CEA, CNES, Digipress, Ecole des Mines de Paris, Intespace, Starsem and Sup'Aéro.

To rekindle in the public mind an association between space and great dreams, wings of shape memory alloys will be added to the satellite. This symbol of freedom is echoed in the invitation extended to every man, woman and child to contribute an individual, uncensored message in the language of their choosing.

Space, a universal metaphor for the infinite and eternal, projects people out of the constraints of the "here and now", encouraging them to reflect differently upon themselves and their future. Between now and launch date, the main focus of the project will be to reach out to as wide a public as possible. So far, messages have been received by post and via Internet from over 90 countries with all age groups represented, thus confirming that KEO can transcend cultural and generation barriers.

This year's paper will show how such a project can offer tangible benefits to society and how it can help rekindle the public's interest in the great adventure that is space.

THE KEO SATELLITE

INTRODUCTION

KEO, a winged satellite, is being launched in 2001 to orbit the Earth for some 50,000 years before returning to deliver a collection of messages from the world of today to the world of tomorrow. Every man, woman and child is invited to contribute to this fresco of messages which will reveal the richness and diversity of the human experience at the dawn of the third millennium. KEO gives each individual the equivalent of four uncensored pages in which to express themselves in the language of their choosing, in which to bequeath a unique and personal portrait to this collective work. All messages received will be included in the satellite.

Following the satellite's launch, all messages will be freely accessible to us in a database. We will therefore have an opportunity to share each other's hopes, dreams, fears, doubts and deepest convictions and by doing so, we may come to rediscover our common humanity. Then might we possibly glimpse the foundations for a future we could forge together.

Endorsed by the European Space Agency, KEO brings together partners from the aerospace industry, all of whom are volunteering their time and expertise to build and launch the satellite for free.

Two years ago in Turin, together with Aerospaziale, we demonstrated KEO's

technical feasibility; its return safe and sound following a 50,000-year orbit around Earth. Last year at Melbourne's Congress, together with Digipress, we showed how the glass disks etched in DVD on which the messages will be engraved could survive 50,000 years'

exposure to cosmic radiation and still remain legible.

This year, with the technical challenges resolved, we will concentrate on how such an undertaking can offer tangible benefits to society. Specifically we will examine how KEO is:

- A rallying and unifying space project: each person who contributes a message to the satellite will not only be able to follow its voyage around Earth, but become an active player in the great space adventure.
- A universally acceptable idea: to date, messages have been received from over 90 countries, written in 53 languages, the youngest sender being four years of age and the oldest eighty-six. North-South, East-West, advanced and developing nation divides are being transcended on a daily basis.
- A valuable teaching tool: schools from around the world are participating in the project. Catalyst in the classroom, KEO stimulates interdisciplinary study, providing

interconnections between subjects normally compartmentalized.

- A voluntary collective endeavor: KEO is being undertaken solely through the voluntary contributions of time, skills, products and services of its many partners, whether in a corporate or individual capacity. This new form of synergy demonstrates that even a complicated, global project can be made to happen outside the normal logic of economics and politics.

To quote UNESCO Director General, Federico Mayor, KEO is a “grand mobilizing initiative” whose “mosaic of messages coming from all layers of society will effectively give a new image of today’s humanity... which will allow us better to define and influence our common destiny”.

Indeed, this paper could not have been written without the help of these different layers of society.

KEO – A RALLYING AND UNIFYING SPACE PROJECT

Having read about KEO in a daily paper, I presented the project to my pupils. I was betting on its grandiose scope, on the attraction of sending a message into the cosmos to encourage my students to write. I anticipated a spark of interest, what I got were fireworks.

A teacher in France

We do not even begin to understand all the wonders that are around us on this planet. Imagine all the wonders to be discovered on other stars and planets! Five hundred years

ago, European explorers were amazed to find the continent that I live on, America. It was also common belief hundreds of years ago that the Earth was flat and that our sun orbited the Earth. Today we laugh at those ideas. How many hundreds of years will it take for the people then to laugh at the people of our time who thought we were alone in the Universe?

A young woman in the USA

... I hope this letter is able to find its place in history. I will think of this project every time I gaze at the stars, which is as often as possible.

A retired gentleman in Canada

I tingle with excitement every time I think that people from the far, far future will be reading my letter and realizing what it was really like in those days. Thank you for saving a little space for my letter in your wonderful satellite.

A fourteen-year old boy in Spain

The universe is a gallery and each star a piece– they will gather to muse at ours.

A prisoner in the USA

This is just a small taste of the general public’s reaction to KEO. Would an ordinary time capsule have elicited the same enthusiasm? Unlikely. The space dimension appears to ignite the public imagination. Indeed space exploration itself has shaken our traditional concepts of Earth by showing our planet as a unity, an integrated whole. And the vastness and distance of space provides an opportunity for a reflection in tranquillity away from the problems of life. Burying KEO here on Earth, apart from raising the question of whose territory it should be buried in, would have symbolized imprisonment or

death, whereas a sense of liberation, a glimpse into unseen possibilities and opportunities needed to be conveyed to the general public.

Combining the destination, space, with a vertiginous timeframe, 50,000 years, means that recent history and the immediate future no longer categorize or imprison the individual— each person is placed on an equal footing. And paradoxically, through giving each individual voice full liberty of expression, it may just be possible to create a momentum of unity and begin to see the human race as just that, one race, and not a fluctuating mixture of geopolitical divides.

That is why KEO, as a space project, is such a powerful metaphor.

KEO – A UNIVERSALLY
ACCEPTABLE IDEA

Sometimes when I read about the cultures of the past, they take on a very impersonal aura, as most cultures in the past did not value individual expression. Times are different.

Executive, USA

It's weird, you know, thinking that one day, some day when I'm nothing more than dust and particles in your soil or air, that you will read this message from me, a simple, ordinary person who's never done anything special or extraordinary.

Student, USA

I consider that one of the characteristics of our world is its diversity and I hope that in 50,000 years' time, this diversity will

continue to exist on our planet and in our world.

Jean-Jacques Favier, French astronaut, interviewed on TV about KEO.

As mentioned earlier, KEO has to date received messages from over 90* countries written in 53 languages. The majority of these messages have arrived by Internet via KEO's web site www.keo.org. This ties in with the central theme of this Congress "Space – an integral part of the information age", for KEO a "message in a bottle" sent into space could not succeed without the

medium of cyberspace. KEO and the Internet seem to transcend cultural and generation barriers. Both are great levelers— a person from Iran or China has the same freedom and opportunity to express himself or herself as someone from The Netherlands or France. A prisoner in the United States can participate as freely as a schoolchild in the UK.

* Algeria, Argentina, Australia, Austria, Bahrain, Belgium, Benin, Bosnia, Brazil, Bulgaria, Burkina Faso, Byelorussia, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, England, Egypt, Estonia, Finland, France, Germany, Georgia, Greece, Hong Kong, Hungary, India, Indonesia, Iran, Ireland, Israel, Italy, Ivory Coast, Japan, Kazakhstan, Kenya, South Korea, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia, Madagascar, Malta, Malaysia, Mauritius, Mexico, Morocco, Namibia, The Netherlands, Norway, New Zealand, Pakistan, Panama, Peru, The Philippines, Poland, Portugal, Romania, Russia, Scotland, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Switzerland, Taiwan, Tanzania, Thailand, Trinidad & Tobago, Tunisia, Turkey, Ukraine, Uruguay, United Arab Emirates, United States, Uzbekistan, Venezuela, Vietnam, Wales, Yugoslavia.

Thanks to the aerospace and hi-tech industries, KEO's physical structure or outer casing is taking shape. However, to breathe life into this shell, we now need to extend the invitation to as many people as possible to contribute a personal message. Or to use another metaphor: KEO is like an impressionist painting where each individual's message is one small dot of paint that he or she leaves before standing back to contemplate and find meaning in the rich canvas of human colors. Yet, this painting will remain unfinished, until every hue of color has been identified and included.

Is there a typical KEO message? The answer is no. Each individual experience is unique whether it is that of a student in Algeria, a New York businessman, a blind woman from France, a Dutch postal worker or a prisoner on death row in the USA.

Yet, certain topical themes recur such as the mention of school shootings by children in the USA, the Kosovo crisis, the Turkish earthquake, and believe it or not, the introduction of the Euro. But though each message is unique, certain human aspirations remain the same whether the person is from Belgium or Burkina Faso, Italy or the Ivory Coast. Everyone wants to be happy, lead a fulfilling life and seek an end to hunger, war and discrimination. Everyone has hopes, dreams, fears, beliefs and doubts.

But what does someone experience when thinking about their own message for KEO? An extract from one of the messages received best sums this up:

To write to an audience 50,000 years away, without any knowledge of what that audience might be or what it has been through, probably has a more significant effect on the writers than the readers. That might be an arrogant overstatement, but the fact is that the mere effort to anticipate something so far removed in time has an alarming and wonderful tendency to put our own time, however tenuous or amazing, in perspective, and perspective is something we desperately need.

KEO – A VALUABLE TEACHING TOOL

I just wanted to convey to you what a creative, far-reaching project KEO is. It really touched the hearts and minds of my students. It is said that a teacher affects eternity. This project is a giant step in that direction.

Primary school teacher, USA

This is a fascinating idea. As a university teacher, I am considering having some of my students write a message to the future, especially regarding the state of the environment. It should cause them to see the world and human activity from an unusual perspective.

Lecturer, USA

To give you an idea of the diversity of interest from the teaching profession, here is how some of the letters requesting information begin:

"I am a science teacher in a small, rural community in New Hampshire... I'm an instructor in English at the University of Michigan... I am a librarian at Sebastian Elementary School... I teach 9th grade

geography in Texas... I am a high school teacher of Earth and Environmental Sciences... I am a headmaster of a primary school in Hautmont, I am a teacher of French and Information Technology in Arles... I would like to be sent more scientific information on KEO. My physics teacher needs the information to better discuss and incorporate the KEO project into her class plans... My chemistry teacher told me about it... ”

The above complements Education International's support for the project where it is seen as an excellent educational lever, allowing a number of multi-disciplinary themes to be introduced into the classroom.

The educational value of KEO is not, however, limited to 1st, 2nd and 3rd level students. Two recent examples show that it goes beyond this. First, a public library in New York organized a series of KEO workshops for adults with learning difficulties. The end result was a batch of messages written by them and sent by post to Paris. Second, a teacher of the mentally handicapped in France sent a request for information so as to include her students in the KEO adventure. Both the librarian and the teacher stressed the positive impact such a project had in helping marginalized groups to reintegrate into society.

Nevertheless, it is a modern irony that public interest in space has been a victim of the rapid progress in digital technology, which it originally helped stimulate. And our appreciation of the wonders of the universe has for some

time been diluted by the fantasy images projected by the modern cinema. The advent of the latest Star Wars film is rivaling the 30th anniversary of the moon landings both in the public and media interest it is generating. However, projects such as KEO may go some way towards changing the blasé attitude of the general public to space. Through its invitation to become an active participant, KEO is welcoming back each individual to the wonders of the “real thing”.

KEO – A VOLUNTARY COLLECTIVE ENDEAVOR

KEO is being realized solely through voluntary help and expertise. This philosophy has been adopted so as to ensure that KEO will be embraced as a gift from the world of today to the world of tomorrow.

Since last year's Congress, KEO has been considerably strengthened by the coming on board of the French Space Agency, the CNES. As they noted in their letter of support:

We wish to be fully associated with and participate in the splendid human adventure you have initiated... We will facilitate the launching of the satellite from Kourou in French Guyana and put our technical expertise at your disposition...

Looked at from the outside, KEO's greatest challenge is perhaps not so much a technical one, but coordinating the various industry experts, all of whom play a fundamental role in the building and launching of the satellite and who are contributing their expertise

for free. And yet this miracle is happening. For to quote Hundertwasser: "When one person dreams, it is just a dream; but when many people share the same dream, it is the beginning of a new reality".

Up to now, it has been easy to categorize individuals. Engineers are rational, artists have their head in the clouds or in this case 1,800 km above the Earth. Yet KEO is proof that each person is a mixture of the rational and the intuitive. The problem is that today's world tends to overshadow poetry at the expense of logical reasoning. But if scientists, engineers, IT experts did not have untapped depths of poetry and art, KEO would not be possible.

What is strange is that this tendency to slot people into specific categories is a fairly recent phenomenon. The Italian renaissance managed to decompartmentalize science, philosophy and art. The result? One of the greatest flowerings of intellectual, scientific and artistic achievement our millennium has known.

This crossover between seemingly irreconcilable disciplines is a living reality with this project. And neither is it confined to KEO's corporate partners. Whether it is the webmaster of the Center for Space Studies of the Universidad de Chile offering to link KEO's site to theirs, whether it is students offering to translate KEO into Chinese, Hebrew, Estonian etc., or a computer developer working in Qatar—all are contributing their goodwill and

own branch of expertise to help make KEO a reality.

Collectively undertaken, KEO is open free of charge to everyone who wishes to participate, irrespective of who they are, irrespective of their beliefs or where they come from. And all messages, without exception, whether they are just one line or the maximum four pages, will be included in the satellite when it is launched in 2001.

KEO – CONCLUSION

Personally, this idea allows me to leave this Earth, perhaps more serenely than would otherwise be the case, in that all traces of our passage including our tombs will probably disappear one day. And yet, perhaps one day there will be a human being on this planet who will read my message.

Businessman, France

KEO is a project that is optimistic about our future and that of our planet. Launched in the first year of the third millennium, it is forward rather than backward looking. In its orbit around Earth, it will be the guardian of our memories for thousands of years to come, preserving as it does a snapshot of the human family at the dawn of the third millennium.

Following the satellite's launch, all messages will be accessible to us in a database. Through sharing each other's messages, we may come to rediscover our common humanity and perhaps see more clearly how best we can strive towards making our future a better one.

KEO, as a space project, is a federative and rallying symbol. For space can provide the necessary perspective to make us realize that we are all brothers and sisters of the same species; that our greatest treasure is to be a member of the human family. And though we may be “insignificant” in the infinity of space, in that very vulnerability lies hope for a new unity among ourselves.

Perhaps in the end that is why such projects touch the public imagination, for when we dream of better things, we do not dwell in the mire but raise our eyes towards the heavens.