

## PRESS PACKAGE

### **KEO... THE SATELLITE THAT CARRIES THE HOPES OF THE WORLD** **The KEO project has been voted “project of the XXIst century “ by UNESCO**

The goals set forth by the KEO project is to take into account the ideas of our fellow contemporaries, “be they small, powerful, rich or poor,” throughout every culture, so as to build a “radioscopy” of today’s Mankind. In turn, this compilation will allow world-wide debate concerning hopes and aspirations of each person for our planet.

#### **KEO’s principles?**

**The satellite baptised KEO, shall be launched into a lengthy orbit around our planet, to land safely back on Earth thousands of years from now. The different messages, that we are all invited to formulate, enclosed within the satellite, will hence be available to our far away descendants. The taking off is scheduled by the end of 2013/14 depending on launching opportunities.**

#### **KEO’s instruments?**

Each human being withholds within an innate quality of representative of Mankind. As such, **each and every person on the globe is invited to step and voice his/her opinions and aspirations.** To do so, four blank pages, void of censorship have been put at their disposal. These messages are destined **to take our descendants for witnesses.**

#### **KEO’s long term vision?**

To **offer to future generations,** our views on our world, through a **unique and authentic page of 21<sup>st</sup> Century Mankind history,** as an archaeological gift.

#### **KEO’s short term significance?**

**To give** each person a chance **to uphold his/her uniqueness** through a form of expression conferring freedom of thought and insuring free speech.

**To give teachers and students** of every countries a share of an educational and cultural project combining science, technologies and cultures.

**To give free access** on Internet to the messages, once made anonymous.

**To achieve an interpretative mapping of the sent messages,** by use of novel computer assisted techniques of processing and treating data. It must be underlined that the versions of the messages kept on Earth in order to perform this analysis will be anonymous.

**To communicate the results of this analysis to the media,** schools, NGOs, governments, and to hence **initiate a universal debate** throughout the globe in order to start building a better world.

#### **KEO’s international acknowledgements?**

The KEO project enjoys an **exceptional media coverage** throughout the world. It receives support from the UNESCO, the French embassy network... the idea it suggests transcends all cultures and religions: messages from over 200 countries, in 80 different languages have already been sent to KEO.

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Video images and CD-ROMs of computer generated pictures that are free of rights are available on request.

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## I – KEO, THE ARCHAEOLOGICAL GIFT OF THE FUTURE

### I-1- OBJECTIVES

The objective of Programme KEO is to encourage the maximum number of men, women and children to participate in the biggest, collective, historical and unique mission ever undertaken in the history of mankind. This venture is designed such that each person is encouraged to dream about the destiny of our species, of our human conditions; to ponder about our epoch; and to reflect and be able to predict about the world and about life.

#### **The KEO project aims at:**

- ◆ offering every person on Earth with the same space of liberty so that he can write his message for his future descendants;
- ◆ making each person express, his thoughts and his hopes through the medium of dreams and mystique;
- ◆ collecting all the written messages and presenting them as a collective work of art, representative of the human community of the 21<sup>st</sup> century;
- ◆ making all the messages anonymous, sharing and analyzing them amongst ourselves so as to participate into a public debate and build a more humane world.

Several thousands of messages, coming from over 200 countries and written in more than 80 languages, have already been received by KEO. All continents and age groups are represented through these messages proving that the metaphor of KEO goes beyond all frontiers and cultures. This emphasizes on the profound and collective desire that exists amongst human beings; the wish to leave a part of their life and their enriching experiences for posterity.

#### **In 50,000 years, the KEO project aims at:**

- ◆ transmitting all the messages and experiences that the men, women and children of today have addressed to our descendants; like a majestic fresco, representative of the human community at the start of the 21<sup>st</sup> century, our future great grandchildren may discover their roots...roots of their ancestors.
- ◆ transmitting to our fare away descendants a true and priceless page of Mankind's history.

## I- 2- KEO: THE BIRTH OF THE IDEA

KEO is the reaction of a French artist and scientist, Jean-Marc Philippe, in response to the contemporary world.

In one of his recent conferences, Jean-Marc Philippe elucidates that:

*“We live in a world today that is dominated by contradictions; at times splendid and at times dismal: splendid and marvelous some days because of the twinkling stars, the beauty of the Earth and the nature, the progress of our knowledge, skills and technology and our capacity to love and give.....dismal and sad some days because of the wars, the murders, the pollution, the disparity between the rich and the poor, the disparity in the levels of our knowledge, the injustice, the torture....”*

*“ .....And yet however, we are a species that are exceptionally talented and gifted who are beginning to realize how small and delicate the Earth is. Even though we form only 0.4% of the entire animal biomass and that we find ourselves in the position of a guarantor and a manager of this planet, we have matched powers with the forces of nature and are able to dictate their destiny and ours....”*

*“..... We live in a world today where man has, for various reasons, forgotten to reflect on his actions: problems in daily life, work pressure, keen competition, scattered information, the necessity to earn his livelihood...sufficient reasons to give us the impression that the “cacophony” we hear in the world today is because we are aimlessly drifting about...”*

*“.....I have therefore looked for a metaphor that can be shared by everybody without any distinction of culture, religion and age... a metaphor that incites each one of us to spend some moments in reflection, free from the anxieties of daily life.....a metaphor that incites us not only to go beyond our span of life and time, but also to take into consideration the duration of the line of evolution of our species....”*

*“.....From here was born the idea of sending into space a satellite that will return to Earth, safe and sound, carrying all our messages, texts, poems and questions.....but a satellite that will return only after a long passage of time.....”*

*“.....From here was born the idea to ask each one to go deep within himself and write, in the 4 pages offered to him, his thoughts on matters that are closest to his heart.....”*

*“.....From here was born the idea to share our messages, to try and know each other, to try and learn who we are, and to realize that we are first brothers and sisters belonging to the same human species and that we belong to a big human family; the fact that we are each representatives of this huge human community is actually our most treasured wealth...”*

*“.....From here was born KEO, a universal invitation to reflect, an invitation to learn more about each other, an invitation to dream about the world and the destiny of our human species.....”*

## II - KEO: THE ODYSSEY OF THE SOUVENIRS OF THE MAN OF THE 21<sup>ST</sup> CENTURY ACROSS TIME AND SPACE

### II - 1- KEO's LONG JOURNEY

#### **The KEO satellite**

Fruit of the European Spatial Industry, KEO will be injected into orbit in 2013/14.

#### **KEO's orbit**

KEO will be injected into a circular or elliptical orbit situated at an altitude of several thousands of kilometers

#### **KEO's flight: the winged satellite**

Around 2013/14, the winged satellite KEO shall depart for a long journey around our planet. It shall return, safe and sound, after some...50,000 years, to deliver all the messages that we have addressed for our descendants (each person on Earth, small, powerful, weak or rich has 4 pages of liberty to send his message: all messages, without undergoing any censorship shall be embarked aboard KEO).

Folded in the cap of the rocket during the launch, KEO's wings, shall function once the satellite is in orbit thanks to the sublimation of the small naphthalene spheres that shall melt under the heat of the sun. Henceforth, the wings will beat in rhythm to KEO's passage under the Earth's shadow and its exposure to the sun's rays. With a suitable optic telescope it will be possible to record KEO's flight as it flutters its wings over its orbit.

After a couple of years in orbit, KEO's unprotected wings will be shed, leaving the core sphere to continue its journey alone in space. Each day, during its long voyage around the Earth, KEO's orbit will gradually decay bringing the satellite closer and closer to its native land.

#### **Re-entry into the atmosphere: a luminous signal in the sky**

As KEO approaches the end of its long journey, its momentum will be checked by the dense layers of the Earth's atmosphere as it descends below 120 kilometers in altitude. It will then enter the final and critical phase of its return flight.

Some 20 minutes before landing, KEO will announce its arrival to our future descendants in the form of a shooting star, emitting sparks of radiant light that will be brighter than those of a natural star. Their luminosity will be continuous and their intensity will be strong.

Some 2 minutes before it lands on the soil, KEO's titanium and tungsten shields will disintegrate under the effect of the heat accumulated during its passage across the layers of the dense atmosphere. Its carbon thermal shield will heat up to 2800°Celsius.

KEO will be equipped to resist this phenomenon and will thus trigger off an ionization that shall release a steam of minute and illuminated particles.

Our future descendants will witness a flash of artificial northern lights in the sky, a strong glow, like a signal.....they will be alerted of KEO's return.

In KEO's core body, the temperature of the archaeological tokens addressed to our future generations will not exceed 450°Celsius. They will thus remain intact.

## II - 2- THE ARCHAEOLOGICAL GIFTS THAT ACCOMPANY OUR MESSAGES

In order to attract every human being amongst us towards the path of reflection, KEO aims to be a symbolic spectacle.

### **KEO: A UNIVERSAL NAME**

The name KEO is the result of **three successive phonemes, (k), (e) and (o).** These are the three most frequently used phonemes across the 100 most widely spoken languages of today. The name KEO can be pronounced by all human vocal cords and thus represents a symbol of unity between mankind. Moreover, as proof of its neutrality and universal appeal, the name bears no cultural or mythological references, past or present.

### **KEO: A PORTER OF SYMBOLIC GIFTS ADDRESSED TO OUR FUTURE DESCENDANTS**

#### **The Earth 2000**

When KEO will return to native Earth, free from its protective shields, it will appear as a small titanium sphere engraved with **an image of present-day Earth.**

This surface engraving will inform our descendants that the strange object fallen from the sky is meant for them. The sphere will depict the present contours of the Earth's seas and continents that would have changed over the passage of time due to the climatic variations and the movement of tectonic plates.

Intrigued by the landing of this strange object, KEO's discoverers will be curious to see its contents. They will thus learn about the archaeological gifts that are addressed to them.

Some of the presents will be easily distinguishable by the naked eye, whereas certain will have to be decoded.

#### **The mosaic of faces**

Aboard KEO, our future descendants will find **a glass plate engraved with portraits of men, women and children.** This mosaic of faces will represent the current diversity of the ethnic groups, which with time and interbreeding will have blended to form a kaleidoscope of uniform colors.

A sequence of double helix DNA unique to Homo Sapiens Sapiens as we exist today will also be engraved (would we too undergo genetic changes?).

#### **The diamond with 4 inclusions**

As KEO's discoverers continue their exploration, they will come across **a diamond with 4 inclusions made of tiny spheres of gold.** The first sphere will hold a drop of water from our oceans, the second will contain a pinch of fertile soil and the third will enclose a sample of the air from the atmosphere surrounding us. More precious than the diamond itself are these terrestrial elements that, in their current composition, make life possible on Earth. The fourth sphere of gold will protect a small drop of human blood, chosen at random from among the different human groups, to symbolize our common genetic human signature.

#### **The sidereal clock**

In order to allow our future descendants **to find out the launch date of KEO,** a second glass plate engraved with accurate astronomical data will be installed. The data will show the position of the planets of the solar system as on the launch date of KEO. Depending on the level of knowledge attained by our future descendants, they will be able to calculate that KEO was launched into orbit some 50,000 years ago (as the same planetary configuration is only repeated every 200 million years).

#### **Our knowledge: a contemporary Library of Alexandria**

Our descendants will then uncover a stack of engraved glass disks that will form a contemporary Library of Alexandria, a treasure chest of **all our knowledge as it exists today:** a catalogue of the flora and fauna, diversity of the arts, fundamental texts of our religions, geopolitical situations, economic agreements etc. ...all this will be exhibited by way of texts, pictures, video clippings and sound.

#### **AND a huge fresco of messages from the people of the 21<sup>st</sup> century**

**The most important gift of them all is a second stack of engraved glass disks that will contain a fresco of our messages; messages that every man, woman and child of the 21<sup>st</sup> century is invited to send to our future descendants.**

## II - 3- THE DECODING OF THE ARCHAEOLOGICAL GIFTS BY OUR DESCENDANTS

### THE KEYS TO DECODING

In order to guide our descendants towards the significance of our messages, **information immediately intelligible to the eye will be provided to them** in the form of holograms and/or diagrams on each side of the glass disks. Around 200 drawings and diagrams shall be made available to them.

They will also come across signs representing some of **the invariants** used in the past by numerous civilizations such as those indicating water, houses, etc,...accompanied by their translation into several languages.

They will also find **a specific disk, engraved analogically** (like an old vinyl record) at their disposal. Next to this they will find a tuning fork, a miniature horn, a record needle and a diagram showing how the disks must be rotated in order to extract their contents.

As soon as the frequency emitted by the miniature horn corresponds with that of the tuning fork, our descendants will hear **human voices speaking the principal languages of our days as well as melodies of the music of our times**. The subsequent disk will contain exactly the same information but this time digitally coded and engraved. Our descendants will then have to begin their work of deciphering and decoding.

### Using the example of the Rosetta Stone

Like the discoverers of the Rosetta Stone, our descendants will learn that the glass disks enclose **real meaning** and not some esoteric symbols.

Their task will be all the more complex because, unlike the clearly visible engravings on the Rosetta stone, the DVD images and the micro-millimeter engravings encoding our alphabets will be imperceptible to the naked eye.

However, we will furnish them with **technical diagrams for constructing a DVD disk reader**, which will enable them to access the visual representation of our messages. These plans will be presented to them in the form of diagrams engraved on the faces of several glass disks aboard KEO.

Often it has taken us some hundreds of years of research, perseverance and careful study to be able to decipher the scripts of the past.

Still today there are several languages which remain incomprehensible. Others required several years of disciplined study while some were transmitted to us over the centuries.

Will traces of our current high-tech world survive the passage of 50,000 years or will they disappear like the ancient Egyptian civilization?

We cannot tell.

How much time will our future generations take to decode the information saved on the glass disks? One day or a thousand years? We will never know.

**KEO, the Archaeological Bird of the Future, beneath its unusual appearance as a carrier of dreams and utopia, is a metaphor of artistic and technological creation and a symbol of individual introspection. It forces each one of us to evaluate ourselves in a new light, to reflect on the different aspects of life and on the destiny of our species.**

**By offering us the opportunity to question ourselves on a personal level, KEO invites us to rediscover the person next door; who may at times seem so different because of his rich cultural diversity and may at times seem so similar because he belongs to the same human family. KEO enables us to realize that we are each "passerbys" on planet Earth and that we should be "proud" of that.**

## II - 4- KEO'S CHOICE TO RETURN TO EARTH IN 50,000 YEARS

**KEO has chosen to return to Earth in 50,000 years because of several reasons:**

- ◆ In order to evoke in each one of us a feeling that **we need to take a moment to stop and think**, to focus on a fixed point, to enjoy the moments of exaltation and silence....
  
- ◆ To allow us to **think and question ourselves differently**, to permit us to define our expectations and our most profound aspirations.
  
- ◆ **To spark off a personal, sensitive and unusual reflection within each one of us**, such that in our hearts, imagination, awareness, intimate convictions, dreams and intuitions supersede the sense of reason.
  
- ◆ To permit each one, through his actions and messages, **to be able to exert an influence** on his epoch and on the collective future destiny of mankind.
  
- ◆ **To induce us each to believe that we are all brothers and sisters of the same human family** and that our most valuable wealth is the sense of belonging to this community which all of us represent.
  
- ◆ To allow each one **to position himself on the ladder of evolution** by reminding him that:
  - the human species came into existence some **5 million years** ago,
  - man invented his first tools at least **2.5 million years** back,
  - he tamed fire some **500,000 years** ago,
  - the sepultures emerged **100,000 years** ago (a true indication of the emergence of metaphysical thought),
  
- ◆ **To especially remind us that some 50,000 years ago, our ancestors while creating their first drawings/ abstract signs on the walls of the Australian caves, displayed our species' ability to access symbolic thought.**

This form of intelligence has allowed us to develop both our mathematical capability as well as our ability to reflect and ponder.

So many skills that form the basis of our current cultural, religious, literary, scientific and technologic developments, among which the recent acceleration of techno-cultural industrial society's know-how.

Let's remind that for 60 years, the Humankind is evenly matched with forces of nature (genetic engineering and atomic engineering); that for several months Humankind creates forms of DNA with six basis nature is not able to gender on Earth ; that one of the most ambitious international research program aims at creating the first artificial living-being under the form of a bacteria.



## III - KEO: A UNIVERSAL APPEAL FOR MESSAGES

**Each person on Earth has 4 pages of liberty to express himself**, in the language of his choice, all that he wishes to transmit to his faraway descendants.

His message can be **an expression of himself, of his way of life, of his dreams, of his hopes, of his revolts, of his aspirations** as an inhabitant of planet Earth.

All the messages received, **without undergoing any censorship**, shall be embarked aboard KEO.

### III - 1-WHAT DOES WRITING YOUR MESSAGE FOR KEO IMPLY?

Due to the space-time duration of 50,000 years that KEO invites us to confront, **we are inspired to widen our personal, cultural and traditional perspectives**. KEO makes us question our emotions and our misty interrogations with respect to how our descendants will perceive our messages.

**By writing his message to KEO, every individual shall not only be in the position to freely speak ABOUT himself, but also be simultaneously in the position to review himself in a new light.**

Our faraway descendants shall also stand back and review our thoughts. We have a certain **responsibility towards these descendants** because our current and collective behavior shall determine “how they will be” in 50,000 years! (will we change on the genetic front and what consequences would that have on them? What kind of environment shall we hand down to them?..).

Moreover, the reference of these essential questions, always **related to an unusual interpellation across the time and the biological and genetic adventure of our species**, corresponds to life in general and to the different ways of thinking residing in the human conscience: meaning of life, meaning of your life, meaning of death, meaning of the individual and collective responsibilities, meaning of the family, meaning of the human family, meaning of the species’ responsibility towards himself, meaning of the species’ responsibility towards other species...meaning of the species’ responsibility towards his own mother planet.

These last questions are the most intriguing because although the human species represents only 0.4% of the animal biomass on Earth, it is responsible for our history thanks to its scientific, technical and organizational competencies.

**It is the guarantor and manager not only of the quality of its individual and collective development, but also of the future of the planet**, especially that which concerns the maintenance of the physico-chemical conditions that reign on its surface and permit the evolution of life.

**Thus, he who writes his message to KEO can only be lead to ponder, even though these reflections are not consciously expressed.**

## **III- 2- HOW TO SEND YOUR MESSAGE TO KEO**

Messages to KEO can be addressed through the **Internet** by logging on to the site [www.keo.org](http://www.keo.org) or by sending them by **post**.

The site keo.org, one of our major communication tools, has received world-wide recognition. In 1999, it won the Prix Ars Electronica and a special prize from the Jury of the Clic d'or awarded by IBM, Yahoo, CB News and Colt. Since the past two years the KEO website has been mentioned on the pages of the worldbestsites and has also been referred to as the "hotsite" by USA Today, etc...

### **Procedure for sending your message to KEO**

! **By the Internet:** [www.keo.org](http://www.keo.org) on the link "Your Message"

! **By post:** Programme KEO, BP 100, 75262 Paris Cedex 06, France.

**You have the liberty from 1 line to 4 A4 sized pages (6000 characters). In order to allow our faraway descendants to know you better, please specify:**

- Name, Surname (optional)
- Sex
- Date of birth
- Nationality
- Country of residence
- Country from where the message has been sent
- Language in which the message is written
- Maternal language
- Address (optional)
- Profession (optional)
- Hobbies (optional)
- How did you discover KEO (if it is through the media, please mention the details: name, date and place of media coverage, name, date and place of the exhibition or conference)

**A project that welcomes everybody to participate free of cost, KEO provides you with the liberty of expression. All the messages, without undergoing any censorship, shall be put aboard the satellite. The closing date for receiving the messages will be announced in the press and on the Internet through the KEO website.**

**Under the veil of anonymity, the messages received by KEO will be published and/or made available for free consultation after the launch of KEO by the year 2013/14**

## IV – KEO: AN ARCHAEOLOGICAL GIFT FOR OUR FARAWAY DESCENDANTS

**Imagine the surprise, interest and curiosity that we would experience if we were to receive detailed messages from the inhabitants of the Lascaux caves....these messages that contained excerpts of their morals, their way of life, their anxieties, their metaphysical horizons...**

Imagine what they could tell us about their relation with their : Friends? Enemies? With their fellow creatures? Mutual aid or war?

Imagine that we got the answer to the question about why did these inhabitants feel the need (?), the necessity (?) to represent the scenes that we see today at the bottom of the caves ...and moreover who were the people who drew them: priests, mislead or brilliant artists?

Imagine still further, that these people left behind a collection of their vocabulary.  
Imagine that they explained to us what love meant to them and how they lived it...Imagine again, that they elucidated the rules of their societies, their ultimate aims in life...their rapport with Nature...their worst fears,...

**Imagine now, how astonished our faraway descendants shall be when they receive as a gift, all the messages penned down by every man, woman and child of our planet...that they enter our world, learn about our morals, dwell into our religion, be it animist or monotheist, study our laws, our GATT agreements, discover our culture...from that of the pigmy with a bow and arrow to that of an executive manager equipped with a mobile phone.**

Imagine also that the safest place to stock all this knowledge and to send all our messages is, the space.

Until now only the powerful (Pharaohs, rich merchants, jurists, saints, poets,...) have been able to leave behind the fruits of their thoughts. Imagine that now all of us, right from the 100,000 people who constructed the Grand Pyramids to the soldiers in the army of Gengis Khan, can hand down our experiences to our future successors...Our perspective towards History would certainly not be the same...

Further, imagine...our descendants touched, perhaps; impatient, without doubt; and dazzled, certainly, by the idea that all the men of this day had the same space of liberty to express their message...like a postcard, like a missive, like a souvenir of themselves, like a simple expression of emotions...

Thus, through KEO we present a gift of posthumous friendship and can we dare say, a gift of love, to our future great grandchildren.

Would our descendants be curious about the contents of the messages?  
Would they find their roots?  
Would they recognize us?  
What kind of planet would we have left behind for them?  
Would our technological civilizations have survived the span of 50,000 years?  
We cannot predict anything.

**As of today we can be sure that KEO's dimension is historic and that each person is invited to participate free of cost in this grand festival to mark his presence in the human community.**

## V - KEO: A PRESENT FOR THE PEOPLE OF TODAY

### Sharing KEO's messages amongst ourselves

Once KEO is launched into orbit around planet Earth, the entire assortment of messages-made anonymous- with a copy preserved on Earth, **shall be freely accessible to everybody on the Internet** (according to certain protocols not yet defined, to avoid any non-ethical utilization).

Like a thumb impression, each human expression is unique.

Thus, each message, irrespective of its content, be it a breath of hope, a verse of poetry or a moment from routine life...is precious.

What would each person "do" with his four pages of liberty that allow him to leave an impact on today's world? What important things does he have to transmit? What would he like to hand over to posterity?

Through this invitation to share each other's message, each of us can question the words of another on the KEO site. Thus for the first time in history, each person can share the thoughts of another, especially those of people who generally go unheard.

"What did you say? ...you the chief of the Savanna, you a child from the slums, you the patriarch, you the mother of a family, you the young girl in love, you the unemployed young lad, you the Nobel Prize winner, you the renowned poet...

Sharing our doubts, preoccupations and expectations, could lead to a new desire to discover and interact with other people, to collectively ponder about our future and to reflect on our responsibilities towards tomorrow's generation.

### A new image of the human community at the start of the 21<sup>st</sup> century

Just as our descendants will learn about our messages (would they discover their roots? Would they recognize us?), we too can have access to the entire collection of the messages from 2013/14 onwards with the help of tools and methods of automatic language processing treatments.

The spatial-temporal invitation to write your messages, where emotions and dreams transcend the individual and the return of a satellite in 50,000 years are fundamental elements that shall ensure the quality of the messages destined to be the object of sociological analyses.

**In the attempt to answer the most basic questions of mankind,  
"who are we, what can we expect from ourselves  
and what kind of future do we want to build together?"**

**KEO aims to be the catalyst to ignite the global fire of comprehensive and active awareness where  
each person, like an actor, will play his individual role.**

### Foundation KEO

After the launch of KEO, Foundation KEO will be created to pursue the enriching work of individual and collective reflection generated by the collection of messages from people all over the world.

Thanks to a more intimate knowledge of ourselves, its first act will consist on initiating a worldwide debate so as to define, together, the world we wish to realize.

The work of Foundation KEO will involve concrete actions dedicated to promoting the new collective consciousness that recognizes its responsibility towards the human species and the future generations of our planet and towards the forces of nature.

It aims at bringing about a collective reaction towards our destiny and towards our aspiration for the future at a time when man is able to match powers with the forces of nature and change the course of his destiny. KEO will then fulfill its part in the public debate.

## VI - KEO and the schools

Gradually as information on KEO spread around the world, **several teachers approached it as a fantastic study material that allowed them to undertake interdisciplinary pedagogic steps with their students. They were able to approach scientific, technological, societal, humanistic and philosophical questions with their students in an innovated way, adapted to all levels of education.**

Drawing from the experiences developed by teachers belonging to the domains of culture and language and diverse levels of education, it was decided to create a **KEO Educational Kit**.

This Kit is a response to those teachers who would like **to conduct an educational programm on KEO** with their students and to inform those teachers who are not yet aware about KEO's educational values.

Thanks to the partnership established with the Education Offices of the Reunion Islands and the financial support of a local company GTIE, the KEO Educational Kits were distributed in large numbers amongst all the educational institutions across the island in March 2002. Currently we are in the process of repeating this same operation in France.

### KEO, a unique educational tool:

KEO has been recognized as an exceptional pedagogic tool and gained the support of the French National Pedagogical Documentation Center end 2002, because it allows every professor to undertake interdisciplinary innovative educational steps with his students. This is achieved by:

- ‡ helping the students **to understand the world** of today by questioning themselves “differently”;
- ‡ encouraging their **reflection on the human societies** and on theirs in particular;
- ‡ developing their **capacities for critical analysis** on the subjects of the society;
- ‡ molding the young people as **future citizens of the world**, making them aware that they are already ancestors of their great grandchildren and that they have **a responsible role to play**;
- ‡ juxtaposing the **marvelous and the questions of the society**: showing their reflections through dreams and interrogations;
- ‡ showing them **that art, beauty and poetry** can have their place right besides science, technology and social debates.

Situated at the **crossroads of science, technology, art, humanism and dreams**, KEO spontaneously addresses itself to the curiosity and enthusiasm of students from all ages.

Going beyond the realms of academics, KEO often becomes the topic of family discussions.

## Why and how do the teachers play a dominating role in disseminating information on KEO?

- Because they inform their students about the existence of the KEO project and give them the opportunity to participate in a collective, universal and historic project that leads everyone to the path of reflection;
- Because they can carry out educational operations with their students using KEO as the theme.
- Because they invite their students to become KEO's relays in their families.

## What does the KEO Educational Kit contain?

- **An educational guide**, conceived with the experiences of several professors which elucidates on the technical feats of the satellite, the archaeological gifts that it carries and various pedagogic ideas for the professors. It also contains replies to the frequently asked questions and a model of the form to be filled while sending your message by post.

- **A CD Rom** (no more available) that contains exhaustive information on KEO: press package, KEO's Values Chart, the KEO educational guide, KEO's pictures and images, KEO postcard, KEO mini-exhibition, KEO posters... This CD Rom is an essential element of the Educational Kit. All the images contained in the CD Rom are free from rights and can be used by all the teachers to enhance their class project on KEO. They can also edit and photocopy the different elements contained in the CD Rom.

- **Five KEO posters** (no more available) destined to be displayed in the most visited areas of the school so that KEO's message reaches out to the maximum number of students and teachers. This will further highlight the global commitment of the entire teaching team.

- **One KEO video cassette** (no more available) produced by the students of the Robert Doisneau de Corbeil (91) School containing all the computer graphics on KEO along with a 7 minutes film on KEO's odyssey.

Twenty KEO postcards (no more available) containing a reminder of the information that needs to be provided while sending one's message by post.

## How can one obtain a KEO Educational Kit?

We are in the process of finding partners who would be willing to financially help us in producing these kits, so that we can distribute them, free of cost, to a large number of teachers. In the meanwhile, the electronic version of the educational guide and the KEO video can be downloaded from the KEO website free of cost.

## Experiences of certain professors who undertook a KEO class project with their students

*“ (...) To all the teachers from across the globe - KEO represents a beautiful experience that you must live through with your students. You shall not see them in the same light...and they neither!”*

### Chemistry Professor – Montreal

*“ (...) KEO has taught the students how to dream.*

*It was much easier for me to teach the students about acrostics and geography using KEO as the theme because the children felt that they were participating in an ambitious project; something that is true and magical at the same time (my message shall travel in an Arian rocket!). The class was so involved in the project, that when I went for appraisals last week, I was told “ Goodbye, continue to make your students dream! (...)”.*

### Professor of the schools CE2 – Reunion Island

*“ I am writing to you to let you know how much my students and me have been influenced by the KEO project...so much that we are going to work on it as our technical project for the next 3 months (...). I find the concept of your project absolutely brilliant and am proud to be able to promote it amongst the people around me (...)”.*

### English teacher – Quebec – Canada

*“The KEO project is a success. We support you 100%. My colleagues and me really appreciate the power of expression it gives to the deprived students. In today’s world we ignore these poor students (...). We thank people like you who bring some sympathy and good faith in this cruel world (...). Thanks you, you who have shown us light at the end of a dark tunnel”.*

### A group of teachers at Clermont-Ferrand – France

*“Hello, I am a trainee teacher at the Arc-en-ciel School of St. Julie at Quebec. I would like to receive a KEO Educational Kit so that I can conduct a KEO class project with my students. I believe that it presents the students with a unique opportunity to write intelligently....”.*

### Trainee Teacher- Quebec-Canada

*“ Hello, I am a teacher in a school at the outskirts of Strasbourg. I would like to make my students participate in the KEO project. (...). I thank you for providing us with this fantastic writing tool that we hope shall add some more positive enthusiasm to an already ‘lively’ class (hmmmm...)”.*

### Teacher – Strasbourg – France

*“Hello, it is with great pleasure and pride that I have enrolled myself as a ‘keolover’. I consider it an honor to be able to participate in this Icarus’ dream. I sent my message this evening itself and it is titled “Love Love”. I am a professor of Philosophy and would like to integrate your site in my academic curriculum for January 2002, titled “The human being”. I would like my students to be able to refer to it while they analyze the different dimensions of the human being. I have a classroom equipped with an Internet connection at my disposal. I am glad to have discovered your site and I sincerely hope that it shall receive a positive welcome from the students, thus leading to a beautiful pedagogic adventure”.*

### Professor of Philosophy – Canada

## VII - KEO: ITS TECHNICAL FEASIBILITY AND CREATION

### 1992/1994: **Conception of the project**

By the end of 1994, the KEO project was totally conceived and described in all its arborescence. **The liveload would always remain below 280°Celsius which would enable KEO to resist the hostile environment in space during the 50,000 years and also ensure that the satellite returns intact to planet Earth in 500 centuries, subject only to the laws of ballistics.** It was also necessary to provide sufficient memory space aboard KEO so that each of the six million inhabitants of Earth would have 4 pages of liberty at their disposal.

### 1995/1997: **Demonstration of KEO's technical feasibility**

After two years of studies conducted by **Aerospatiale, Sup'aero**, KEO's first technical feasibility demonstration was carried out in June 1997.

Moreover, corresponding studies were presented at **the 48<sup>th</sup> International Astronomical Congress** (Turin, October 1997, abstract no: IAA-97-IAA.8.2.07) before the industries and global agencies developing spatial technology.

It was decided that KEO's mass shall be 200 kg.

### 1998: **Demonstration of the durability of KEO's memory supports**

In July 1998, an experiment was conducted at **the Grand Accelerator of Heavy Ions of GANIL (CNRS/CEA – Caen)** that proved the durability of KEO's memory supports and all the information engraved on them.

The experiment consisted of irradiating the glass supports containing information identical to that carried by KEO by a flux of particles equivalent to the cosmic radiation endured during the period of 50,000 years.

**The experiment also verified whether the glass supports and the information engraved on them shall remain intact when KEO returns to Earth.**

(Study report GANIL/ GARI/ CIRILN/ ref.MT.J 03/98).

This report was communicated during **the 49<sup>th</sup> International Astronomical Congress held in October 1998 at Melbourne** (Abstract no: IAA-98-IAA.8.2.07).

### 1997/1999: **Optimization of the first technical studies: reduction of the mass and dimensions**

In order to respect the demands laid down by Arianespace and not to change the restrictions of KEO's initial liveload, complementary studies were conducted by the engineers of Aerospatiale Matra.

This led to a new technical definition for KEO whereby, **its mass would be less than 100 kg and its dimensions would allow it to be launched as a secondary satellite aboard any rocket belonging to the Ariane family.**

### 2000: **New technical data**

As a result of new technical advancement, the technical partners of KEO declared that the glass disks would be able **to resist a temperature of 480° Celsius.**

### 2001/2002: **KEO's final technical definition**

In order to be compatible with the new data that led to a reduction in KEO's mass, the engineers of Arianespace, Astrium, CNES, EADS, and Sup'Aero **needed to redefine the new technical dimensions of KEO.**

### 2004 : **Industrial definition**

Today, the final technical design is under the ESA responsibility (European Space Agency), which, having in its turn revalidated the former files, confirmed in the conclusions of the technical studies *“ KEO is a passive satellite of straightforward design....., that its mass is around 100 kg (including 70kg for the satellite itself, together with an ejection system of about 10 kg). Moreover that KEO is feasible within 24 months as from the decision of manufacturing .”*

**KEO is a passive satellite that will return to Earth thanks to the laws of ballistics (planetary, lunar and solar attractions), the pressure of solar radiation and the breaking of the terrestrial atmosphere. Its dimensions and mass are compatible with the different launch rockets of the Arianespace family. Today, KEO has different possible launch dates in 2013/14.**



## COMPLEMENTARY TECHNICAL EXPLANATIONS

### **The materials with which KEO is constructed**

The materials with which KEO shall be constructed, namely, **titanium, glass, carbon/carbon, ablative materials, metallic foam**, have been selected because of their capacity to resist the test of time and extreme conditions in space.

### **KEO's protective shields**

Several protective shields shall envelope KEO and its archaeological gifts to ensure that KEO's liveload shall remain intact even after 50,000 years.

**Anti-meteoritic and anti-human debris shields:** constituted by metallic substance and separated by vacuum, these shields will dissipate energy of micrometeorites in the solid angles, that are all the more open and that cannot harm KEO's liveload.

**Anti-cosmic ray shields:** comprised of titanium and aluminum these shields will protect KEO's core body from cosmic radiation, such as solar radiations.

**Thermal shields:** made from ablative and insulating material, they guarantee that the temperature in KEO's core body shall not exceed 480° C.

**Anti-shock shields:** constituted from metallic foam, these shields will enable KEO to absorb the shock during its return to Earth at a speed that can reach 130 meters per second.

**Shield that guarantees against sinking:** fabricated from titanium, chosen because of its ductility, this shield will guarantee KEO's floating by forming a spherical envelope if KEO makes a sea landing (the density of KEO's liveload will be less than 1).

### **KEO's orbit**

KEO has two choices. Since KEO's mass was recently lightened, KEO may be injected **into an elliptical orbit or into a circular one** with a range of several thousand kilometers.

### **KEO's position in the parent rocket**

Respecting the rules for a **secondary passenger**, KEO can be placed in different ways in the cone of the rocket developed by Arianespace: either a fixture on the flat form, or a fixture on the pole depending on the kind of mission.

Today, KEO's dimensions are such that they take into account all the constraints related to its launch by several types of missions.

With its wings spread out, **its total span will be 9 m**, its **body diameter shall be less than 80 cm** and **its total mass will be less than 100 kg**.

KEO will be electronically neutral in order to avoid any disturbance to the principal satellite.

## VIII - KEO: ITS PRINCIPLES OF WORKING AND ITS PARTNERS

### VIII- 1 THE PHILOSOPHY OF ITS CREATION

In order to respect the universal values that are fundamental to KEO and to be welcomed by all persons belonging to the existing human community, **Programme KEO is a non profit organization, in accordance with the 1901 French Law. KEO's goals are not influenced by any commercial, religious or political benefit.**

KEO is a project that is supported by its numerous partners who are renowned for their professional excellence. **They are offering their expertise and competencies to KEO free of charge.**

To this day, the objectives of the project have been realized solely through the benevolent contributions made by its many partners and well wishers.

### VIII -2- KEO'S PARTNERS AS OF TODAY

#### A) Regarding the technical faisability of the satellite

##### **Aerospatiale Matra**

First technical feasibility study

##### **Arianespace and Starsem**

Agreement in principle to launch KEO as a secondary satellite

##### **CEA**

Cosmic radiation resistance tests

Development of shape memory alloy junctions

Construction of micro-inclusions for the archaeological gifts

##### **CNES**

Contribution toward the technical definition of KEO

##### **EADS**

Final definition of the dimensions of KEO, definition of the thermic shield

##### **Ecole des Mines de Paris**

Study of the chemical environment of the liveload and execution of the computer graphics

##### **Intespace**

Flight conformity and wing deployment tests

##### **Sup'Aero**

Contribution towards the technical feasibility study and building of wings

##### **Plasmon (ex Toolex and ex Digipress)**

Engraving of messages on glass disks

##### **International Space University**

Technical expertise at our disposal for the functioning of the project

#### B) Institutional Endorsements

##### **The Alliance Française**

Providing network around the world for the messages collection

##### **European Space Agency**

Moral endorsement and network providing

**International Olympic Committee**

Moral endorsement

**FIDH (International Federation of Human Rights League)**

Providing their international network for the collection of messages from across the globe

**LDH (Human Rights League)**

Providing their network for the collection of messages from across the globe

**Ministry of Foreign Affairs**

Promotion of KEO and providing the French embassies worldwide network

**Civilization Museum, Quebec**

Organizing a prestige exhibition “*Prelude to KEO’s flight*” sprawled across 1000m<sup>2</sup> (from 8<sup>th</sup> September, 2001 to 9<sup>th</sup> January 2003)

**Louvre Museum**

Lending of 51 original works of art to enrich the KEO exhibition, *Prelude to KEO’s flight*, held at the Civilization Museum, Quebec, organized as part of the *French Season in Quebec*

**UNESCO:**

Moral endorsement: election of KEO as “Project of the 21<sup>st</sup> century”, exhibitions at the UNESCO headquarters in Paris (1997)

**C) Communication tools**

**BaBeL@STaL**

Design conception and execution of the first and second website [www.keo.org](http://www.keo.org)

**Carré Noir**

Creation of the KEO logo

**Groupe Baton Rouge**

Conception, realization and fabrication of all the communication supports

**GTIE**

Financial support for duplicating and spreading KEO’s pedagogical kit over the Reunion Island

**Kaos**

Creation of the name KEO

**Mikros Image**

Image and sound post-production

**Orange (Command and Hutch)**

Logistic and financial endorsement for KEO’s communication campaign in India (Septembre 2002)

**Sipa Press**

Lending of free of right pictures

**SNA**

Creation and duplication of the CD Rom

**Videonet**

Supply of betacams

## **D) Communication Channels**

### **The Town of Les Ulis**

Creation of an exhibition “ KEO’s prelude to flight” and organization its presentation abroad

### **Radio France Internationale (RFI)**

Regular coverage of the project in 18 languages

### **Education Offices at the Reunion Island**

Circulation of the KEO educational kit to all the academic institutes present in the Reunion Island.

### **Science Reunion**

Assistance in KEO’s promotion across the Reunion Island.

### **Touristra**

Promotion of KEO through its network of holiday villages

## **E) Information technology**

### **Cable and Wireless (ex Isdnet)**

Hosting the site [www.keo.org](http://www.keo.org) and the domain [keo.org](http://keo.org)

### **Lingway, Solutions in language processing**

Provision of techniques and softwares for linguistic analysis

## **F) Support for the Project Co-ordination Team**

### **Air France**

Air Transport

### **The Town of Paris**

Provision of premises for the office of the Project Co-ordination Team

### **Marsh**

Consultancy in Space Insurances

### **EFEC**

Accounting services

### **Gom Propreté**

Maintenance of the KEO premises

### **JM Bruneau**

Office and equipment supplies

### **Klein~Goddard & Associés**

Professional legal services

### **Sokatel**

Installation of telephonic and computer cables

## **VIII- 3-WHY HAVE THEY CHOSEN TO CONTRIBUTE TO KEO: SOME EXTRACTS DISPLAYING THE MOTIVATION OF KEO'S PARTNERS**

### **Patrick TEJEDOR, past Director of Human Resource Development, AEROSPATIALE**

*“ In May 1995, while I was Director of Human Resource Development at the Aerospatiale Group I met Jean-Marc PHILIPPE on this project which was not yet named KEO, and I understood immediately what a project such as this could offer to all those who actively participate in it.”*

#### **1. For the persons in the organization:**

*Each one of us has a hobby, an activity that we enjoy doing (sports, flying at an air club, community work...) and why should we not dedicate some of our free time to a project that is as beautiful and as grand as this? At least, it was necessary for me to encourage those people who were interested in working on this project at an individual level. KEO allows each individual, who so desires, to blossom and grow with such a marvelous project.”*

#### **2. For the image of the enterprise**

*Be it through publicity, advertising, patronage or prestigious actions, the enterprise must always exhibit an image of force, strength, optimism and appeal before its target audience who are the authorities, the financial institutions, the clients, the general public, its own employees, .....KEO with all its universal and humanistic splendor will be a fantastic vehicle for the enterprise.*

#### **3. For displaying our know-how**

*KEO needs technical skills, competencies and precise knowledge in certain fields. And our enterprise possesses an excellent level of know-how in these subjects- calculation of the path of the satellite, launch into space, return through the high layers of the atmosphere, development of difficult material, integration of a satellite,.....  
KEO will be a display window of our know-how.*

#### **4. For the integration in the enterprise:**

*Aerospatiale, thanks to its multiple activities and organizations, would request contributions from many entities belonging to the same group, who would together contribute to a common action. This has become even more possible with EADS. KEO would be a true integrator and a common project in such a big company.*

*To recapitulate, one could say that the above 4 points concern the following persons:*

*point 1: The Director of Human Resource Development and The Branch Manager*

*point 2: The Communication Manager*

*point 3: The Technical and Industrial Director and The Commercial Director*

*point 4: The General Manager*

*One can clearly see that the entire company benefits from KEO!*

### **Jean-Louis GOUBIN, Communication Manager, ARIANESPACE**

*« ROCKETS FLY,  
SATELLITES FLY,  
ARIAN FLIES,  
KEO.... WILL FLY,*

*ARIANESPACE, the first spatial transporter, supports the experimental challenge that symbolizes KEO, its objective and its mission charged with hope, adventure and eternity.*

*ARIANESPACE wishes to go beyond its daily rigorous work of technical and commercial performance by participating in this endeavor to bond with the men and women of our planet through relationships, exchanges and interaction.*

*The force of ARIANESPACE lies in its ability to forge towards the future, strive towards excellence and then merge with the infinite space.*

*Together with KEO, ARIANE, supporter of the activities of the 21<sup>st</sup> century, will carry the testimony of an epoch, the flame of the civilizations, the confidence of millions of human beings that live on our old EARTH, to the extreme frontiers of tomorrow and the day after”.*

## **Philippe FEINSILBER, Chief Executive Officer, BABEL@STAL**

*"[BaBel@StAL] has chosen to help project KEO because the entire company was not only impressed by the project but also by the team that promotes it. We witnessed an enthusiasm, an investment and a professionalism that matched ours, thus permitting us to liberally express ourselves. From the technical aspect, the site and the Internet construction of KEO had been a passionate problem in terms of managing multilingual messages. The communication logic of the project, based on its meaning and originality, has the goal of promoting the dispatch of messages and the "word of mouth" communication through the Internet."*

## **Jean-Pierre TROTTIER, Director, CENTER OF MATERIALS P.M. FOURT DE L'ECOLE DES MINES OF PARIS**

*"Like many encounters that happen by chance, I once met in 1995, the creator of KEO. The creations of Jean-Marc Philippe combine the most advanced domains of technology and in particular those of materials. Thus it was most logical for the Center of Materials of the Ecole des Mines of Paris to join hands with KEO."*

*The artistic and technical originality of the project, its humanitarian content, and its cultural universality have immediately sparked off a curious interest amongst the students and researchers that are generally involved in "utilitarian" work. They have been equally impressed by the benevolent participation of all the universities and the industrial partners.*

*In a society that is increasingly becoming dependant on technology, where paradoxically the number of young European people pursuing scientific studies is declining, a project such as KEO can reorient this trend which is damaging the future.*

## **A. RODOTÀ, General Director, EUROPEAN SPACE AGENCY**

*"...I have been very interested by this project which harmoniously combines new technologies, art, humanism and education (...). I hope that following the example of the ESA, the entire European spatial community will reunite around KEO. This will showcase our competencies at an international level. I congratulate you once again for having conceived this beautiful project that provides our citizens with a new image of the space..."*

## **Antoine BERNARD, Executive Director, INTERNATIONAL FEDERATION OF HUMAN RIGHTS**

*"... It is with great pleasure that I confirm the IFHR's participation as partners in the launch of the KEO satellite. The philosophical, universal and optimistic dimension of your initiative has seduced the entire IFHR team and it is essential that we associate our organization and the universal Declaration of Human Rights with the messages that KEO will transmit to our faraway descendants. We thus assure KEO's promotion through the 105 organizations that are members of the IFHR and ask each one of them to send in their message such that KEO can be the porter of the essential values that found the actions of our organization (...)"*

## **Jean-Louis MARCE, Chief Executive Officer, INTESPACE**

*"This fusion of art and technology which is the essence of the project KEO, the archaeological bird of the future, and most certainly its humanitarian dimension are the two aspects of this project that impressed me immediately. Nothing can be more sublime than participating in this adventure.*

*The work of INTESPACE is to reproduce the same hostile environment that any space object may encounter during its launch and its life on orbit. Thus it was only natural that INTESPACE participates in this adventure by executing several weeks of trial of the environment that would allow KEO to accomplish its mission of 50,000 years.*

*For a technological company like INTESPACE, this association represents an opportunity to give the technicians, which we are, the chance to transcend our work in some sort and to federate our efforts. Thus we can develop our know-how as a test center by effectuating environmental, mechanical, thermal and electronic trials on the satellite KEO so that it can realize its missions.*

*By this voluntary action, we would also like to display that despite the severe conditions that exist in reality in the commercial world to which we have to adapt, there is always some space for dreams and humanity in our adventure.*

## **Ivan GAVRILOFF, Director, KAOS**

*“KEO is a project that incarnates poetry and humanity. Rare are the occasions available to an enterprise to offer its services generously and free of charge. Moreover, how can one possibly not surrender to the extremely polite requests of Jean-Marc Philippe?”*

## **Bernard NORMIER, Chief Executive Officer, LINGWAY**

*“The universal symbolism of the KEO project can only but fascinate a computer engineer-linguist: undoubtedly this is the first time that we see a collection of several millions of messages coming from across the globe, all replying to the same question, originating from diverse cultures, nationalities, written in all languages possible.. This unique corpus will be the best representation that we can ever imagine of what are the values, the hopes and the fears of the human community today. Only a project like KEO can gather such content to transmit to our future generations, who without doubt would analyze and interpret it in order to know us better and this is what we ourselves must do today.”*

## **Paul LORIDANT, Senator, ULIS TOWN**

*“It was in September 1999, at the time of selecting the theme of our forum for Plastic Arts that I had the opportunity to meet Jean-Marc PHILIPPE and the chance to know about the KEO project.*

*For a city situated in the outskirts, 25 km from PARIS, administratively created in 1997 on the old ZUP, it was a challenge to launch the creation and the realization of an exhibition that blended the arts and the sciences.*

*Moreover, its humanistic philosophy replies appropriately to the concerns of the elected local and the member of Parliament that I am:*

- *the appeal to all voluntary help from prestigious enterprises and partners*
- *a search for cultural universality as well as exceptions*
- *the dream of leaving behind messages for our descendants*

*everything converges towards the same intimate and collective preoccupation of putting together all these pieces of the puzzle of our human, political, social and cultural life.*

*Who is the person who has never dreamed of or dared to dream of leaving behind a legacy for his descendants? It is having faith in eternal moments!”*

## **Philippe VIENOT, Director Space Department, MARSH**

*“Just one meeting with Jean-Marc Philippe, creator of the KEO project, confirmed our decision to offer our support to KEO. Several aspects of the project’s concept have enchanted us.*

*First and foremost, at a symbolic level, this winged sphere whose wings beat to stimulate its flight, then separate, leaving the sphere alone to pursue its journey silently across its orbit for 50,000 years before returning to Earth amidst luminosity and light in order to transmit the memories of the 21<sup>st</sup> century to our faraway descendants, is the carrier of a very beautiful facet of our dreams.*

*On a more practical note, the quality of the partners that Jean-Marc Philippe has succeeded in associating KEO with to make the project a reality, proves the credibility and the seriousness of his initiative and we are motivated to join the partners that have already given their stamp of approval to KEO.*

*And finally, for MARSH, global leader in insurance brokerage, being associated with KEO, with all its humanistic and generous ambitions, that reach out to all the generations to come, and clearly targeting the future, seemed especially adapted and well suited, because MARSH conceives its collaboration with its clients and partners in a global way that promises to be long term.”*

**Thierry AUDRIC, Vice Director of the General Direction for International Cooperation and Development, FRENCH MINISTRY OF FOREIGN AFFAIRS**

*“... The Ministry of Foreign Affairs wishes to be associated with this KEO project by finding the possibility to project before a huge public an image of the French high technology at the service of a mesmerizing artistic idea.*

*The Ministry of Foreign Affairs had thus decided to organize an exhibition on this project as part of the French presidency at the European Union.*

*Moreover, it has encouraged the French embassies abroad to associate themselves with this project by being KEO's correspondents for the collection of messages. Once each embassy has adapted this association to its country and its possibilities, it will allow us to create a cultural and scientific animation of quality (...).*

**Patrick KARABETIAN, President, SOKATEL**

*“Time is never lost. It is dedicated to others”.*

*It is the charisma and passion of Jean Marc Philippe, creator of KEO, that has lead us to participate in this wonderful adventure across time. How could Sokatel, specializing in telecommunications and development of networks, not embark on this first ever undertaken journey that also presents a human dimension?*

*We confirm, with utmost honor, to pool in our experience and knowledge in order to support KEO's realization.*

*“Man knows the world, not because he steals from it, but because he adds value to it.”*

**Christian GOURLAND, Director of the Department for Vacations, TOURISTRA**

*“There are some encounters in life that that make you grow. There are some people who make you sit up and take notice of things that are far and high. Jean-Marc Philippe is one of them and KEO is an extension of our dreams. Long live KEO.”*

**Federico MAYOR, General Director, UNESCO**

*“...I remember very clearly that during the exhibition, “Science in Art”, presented at UNESCO in May 1997, the KEO model had captivated everybody's attention. According to me, the idea of presenting an archaeological gift to our future descendants in the form of a satellite into space, carrier of our messages, describing the situation of our planet, seems very appropriate and timely. The mosaic of messages originating from every strata of society will effectively provide an unedited image of today's human community; by being accessible to all it will permit us to define and react on our common destiny. I confirm*

*with great pleasure that UNESCO will associate itself with this beautiful initiative to which I grant patronage of the Organization (...)*”

**Individual expertise:**

**Nicolas BORDAS, Vice-President France, TBWA Group and Chief Executive Officer, BDDP & Fils**

*“KEO is a magical project. First and foremost, this concept of Jean-Marc Philippe is a fantastic idea in the field of communications. This idea anchors in our minds and stimulates in each one of us an increasing awareness of consciousness towards humanity. It obliges us to go beyond the realm of daily perception by forcing us to think of our faraway descendants and not just the children of our children. KEO is thus a technological project in the true sense of the term, which fuels the progress of service with a cause that is universally human.*



## IX – KEO: FREQUENTLY ASKED QUESTIONS

- Why have you chosen the name KEO?
- Why have you chosen to send “this souvenir of humanity” in space rather than burying it under the earth?
- Why 50,000 years?
- What are the possible risks of collision with meteorites and debris?
- Can KEO’s safe and sound return to Earth in 50,000 years be guaranteed?
- Even if the satellite survives in space for 50,000 years, how would we know that our messages are intact?
- How would our future descendants be able to read our messages?
- Do we need to pay anything to participate in this project?
- When can we start sending in our messages?
- Can we write what we please?
- Can we also send drawings, photos, sounds,.....?
- What about those people who are illiterate?
- What about those people who do not have access to the Internet?
- In which language will the messages be preserved?
- Can we consult the contents of the messages?
- How is this project being financed?
- What energy resources will KEO utilize?
- Can we communicate with KEO during its flight?
- Why does KEO have wings?
- If KEO is a passive satellite, how can it flutter its wings?
- How will the information forming the “Contemporary Library of Alexandria” be chosen?

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- **Why have you chosen the name KEO?**

*It was necessary that the name of the project reflected its spirit of sharing and exchange. This name had to be acceptable by all people irrespective of their age or culture. Since no such example of universality existed in our past or our local mythologies, one partner came up with the idea to research the sounds (phonemes) common to the most widely spoken languages today and to choose the ones that are used most frequently: [k], [e], and [o].....and hence was born KEO, a name that is pronounceable by all cultures.*

---

- **Why have you chosen to send “this souvenir of humanity” into space rather than to bury it under the earth?**

*Space appeals to the human imagination and KEO is addressed to the imagination of each person. Moreover, if we would have decided to bury this Fresco of Messages, we would have had to select a place, a country..... whereas space belongs to everybody...or nobody.*

*KEO will certainly encounter dangers in space but will be immune to any catastrophe on Earth. In fact if any calamity was to occur, KEO would indeed play the role of a guardian of this “souvenir of humanity.”*

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- **Why 50,000 years?**

*50,000 years is the mirror date to a milestone in the evolution of our species: the first traces of art reveal the human capacity for abstract thought and symbolic expression.*

*50,000 years is a distance in time so compelling that it forces us to shed our worries and daily routine and puts us each on an equal footing, inviting us to bask in our thoughts, intuitions and deepest convictions...*

*However 50,000 years only represent only 1% of the evolution of the human species that have appeared on Earth some 5 million years ago.*

*It is also the concept of time and distance that will give our treasures a genuine archaeological value because it is very probable that definitive traces of the activities of the Man of today will be in turn rediscovered by the Man of tomorrow.*

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- **What are the possible risks of collision with meteorites and debris?**

*The main risk for KEO is the possibility of a collision with micrometeorites or space debris of human origin. This is the reason why the core of KEO is protected by several layers of shields made from aluminum, titanium and tungsten that are separated by a vacuum.*

*Nevertheless, if the pollution of human origin in space continues to grow at its present level over the next fifty years (+5% per annum), KEO would have practically no chance of survival.*

*There is no doubt however, that restrictive measures will be taken to prevent this since space debris is not only endangering the operation of costly military, scientific and commercial satellites, but more importantly threatening the lives of astronauts in space shuttles and stations. Thus, the big spatial groups like the NASA or the ESA are already developing programs to “clean” this debris. This is the reason why we consider this risk as non significant.*

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- **Can KEO’s safe and sound return to Earth in 50,000 years be guaranteed?**

*A technical feasibility study carried out during the years 1996-1997 concluded that KEO’s safe and sound return to Earth in 50,000 years was possible. This means that KEO has reasonable chances of attaining its objective of an interplanetary mission being launched today. For this, KEO takes advantage of our present day capabilities in precision design, technological mastery of capsule re-entry and uses materials that have demonstrated their durability in nature (eg. titanium, tungsten).*

*(For more information, you could refer to the site, [www.keo.org](http://www.keo.org) and download 3 pages in English that talk about the technical feasibility of the project at the 48<sup>th</sup> International Astronautical Congress, Turin, October 1997.)*

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- **Even if the satellite survives in space for 50,000 years, how would we know that our messages are intact?**

*In July 1998, the National Grand Accelerator of Heavy Ions (GANIL) conducted an experiment whereby glass disks on which our messages will be engraved were exposed to intensive radiation. The experiment showed that the disks and their data remained intact even after they were exposed to an equivalent amount of cosmic radiation that they will undergo in 50,000 years.*

- 
- **How would our future descendants be able to read our messages?**

*It is evident that what is a “must” in our technology today -a laser reader- will be absolutely obsolete in the future. However, due to its volume and innate fragility, a DVD disk reader cannot be included in KEO’s payload. Therefore we are currently working on creating diagrams bearing simple symbolic explanations to construct a DVD disk reader in order to make it possible for our future descendants to access the contents of the disks. Following the example of the Rosetta Stone, this information will be repeatedly made available to them such that it is clear and easy to decode.*

- 
- **Do we need to pay anything to participate in this project?**

*No. KEO is an operation that is open to everybody free of cost.*

*In order to make it possible for everybody to participate in this project, we have managed to restrict the cost of individual participation to the cost of an Internet connection or a postal stamp to send the message.*

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- **When can we start sending in our messages?**

*You can send your message right now, either via Internet through our site [www.keo.org](http://www.keo.org) by visiting the page titled “Your Message ” or by post to: Programme KEO, BP 100, 75262 Paris Cedex 06, FRANCE.*

- 
- **Can we write what we want?**

*Yes. All messages received by KEO will be sent aboard the satellite without undergoing any censorship.*

*It is upon each individual to decide what he wishes to write in his message.*

*The only restrictions are the length of the messages that cannot exceed 6,000 characters or 4 A4 sized pages (so that each person has the right to contribute) and the obligation to fill the information asked so that our future descendants know who is the author of the message (name, sex, date of birth, nationality, country of residence, maternal language, address, profession, hobbies and how did you discover KEO).*

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- **Can we also send drawings, photos, sounds... ?**

*No, only written messages will be accepted. Drawings, photos and sound are heavy consumers of disk memory and would not permit each person living on this planet to express himself. Keeping in mind the physical constraints of the memory space, a certain form of restriction or censorship would have been necessary. This contradicts the spirit of the project that is collectively open to everybody. However since images and sound form an integral and important constituent of our times, they will be represented in the “Contemporary Library of Alexandria” , the encyclopedia of all the knowledge, habits and customs of the Man of the 21st century.*

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- **What about those people who are illiterate?**

*KEO depends essentially on the human solidarity to receive messages from those people who are illiterate.*

*We are currently working with several international networks to publicize the project and to help in the collection of messages.*

*When a child hears about KEO at school, on television, in the library or at the dispensary, we hope that he talks about this to his parents or his grand parents. If anybody amongst them do not know how to write, don’t you think that this child would pen down their oral message?*

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- **What about those people who do not have access to the Internet?**

*If you do not have your own Internet connection you may try and find it in the neighborhood-at a friend’s place, at a cyber cafe, at the library, at school or at the city hall. Or you may address your message by regular post at: Programme KEO, BP 100, 75262 Paris Cedex 06, FRANCE.*

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- **In which language will the messages be preserved?**

*The messages will be stored in the author's original language, the language that he has chosen to express himself.*

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- **Can we consult the content of the messages?**

*Yes, all the messages, **after being made anonymous**, will be made available for consultation. We ourselves are looking for a wide coverage and readership of the messages. We believe that without a real exchange of messages between us, KEO will never be able to completely attain its goal.*

*In fact even though KEO constitutes a formidable gift for the future generations, its real interest lies in the impact it will have on us today.*

*Slowly and gradually as the messages arrive they will be stocked in secured databases which will be made accessible via the Internet **after the launch of KEO**. Each person can thus inquire about the human community that exists in Africa, America, Australia, Asia and Europe.....*

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- **How is this project being financed?**

*KEO is a non-profit undertaking which is being realized solely through the benevolent contributions of several professionals, individuals, enterprises and institutes who pool in their knowledge free of any charge.*

*Thus, Programme KEO being an ethically transparent organization can avoid all criticism regarding better usage of resources for other objectives such as humanitarian goals.*

*Only the Project Co-ordination Team of Programme KEO that works full time to manage the different activities and participants has to find ways of financing its daily operations.*

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- **What energy resources will use KEO?**

*KEO does not have its own energy. It is a passive satellite which means that it does not contain any energy sources or active instrumentation on board. Once injected into the orbit, it is only subject to the laws of nature (ballistic forces, terrestrial, lunar and planetary attraction, pressure from solar radiation and breaking due to the Earth's residual atmosphere), that will be responsible for its long journey of 50,000 years before it returns to its native soil.*

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- **Can we communicate with KEO during its flight?**

*No, because KEO is a passive satellite that cannot be contacted once it is launched into its orbit. Since it will be orbiting around 1,800 kilometers above the Earth it will be possible to view its flight with the help of powerful optic telescopes. On the other hand to survive 50,000 years KEO has to be made up of stable materials alone: interactive materials like batteries which would have permitted us to communicate with it, would have in return endangered its life due to their unpredictable decomposition.*

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- **Why does KEO have wings?**

*Purely for symbolic reasons KEO is adorned with two big wings. This image will appeal to the human imagination as the mythical figure of a bird that is the messenger of the people of the 21<sup>st</sup> century.*

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- **If KEO is a passive satellite, how can it flutter its wings?**

*To allow its wings to flutter, KEO uses a leading-edge technology "shape memory alloys". These are metallic alloys that are able to assume different shapes according to different temperature ranges and are able to revert to their original shapes each time they are brought back under their original temperature.*

*In this case, the difference in temperature between shadow and sunlight is exploited, so that during its orbit around Earth, KEO will spread its wings when it is touched by the sun's rays and fold them when it re-enters the Earth's shadow. Therefore, no form of energy is needed to make KEO's wings function.*

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- **How will the information forming the "Contemporary Library of Alexandria" be chosen?**

*A multicultural, multidisciplinary and multidimensional « Committee of Learned People » has been assigned with the responsibility to classify all the information, both geopolitical and cultural (translating our habits and customs) of the people of the 21<sup>st</sup> century for the benefit of our future descendants.*

## X – THE CREATOR OF KEO

**JEAN-MARC PHILIPPE**  
**ARTIST, European born in France**

### SCIENTIFIC UNIVERSITY EDUCATION

Specialist in internal geophysics, decided during his thesis (external geophysics) to extend rational knowledge to Art.

### ARTISTIC ACTIVITIES:

#### 1967 to 1984: PAINTER

His paintings express the spiritual vacuum of the techno-cultural western societies: translation of his revolt and his interrogations. Around forty exhibitions (collective and/or individual) displayed at Paris: Galerie Alexandre Iolas (1974), Galeri Attali (1976), "One Man Show" FIAC Grand Palais - Paris (1981), Musée d'Art Moderne de la Ville de Paris (1983), Centre George Pompidou (1984, 1989),...

### SINCE 1980: MULTI-TECHNOLOGY AND MULTIMEDIA ARTIST

The traditional artistic equipments like brushes and colors slowly disappeared from his palette to give place to modern new technologies, that he exploited for expressing his artistic imagination; developed novel and creative tools to reply to his needs.

### INITIATOR OF THE RELATION BETWEEN "ART-SCIENCE-TECHNOLOGIES"

#### PIONEER OF ANALOGICAL AND DIGITAL IMAGES

- Conceived his own electronic circuits to produce analogical images that he created during the years 1975/80 ( "**Walk in the madness of Vincent**", "**Variations in Bénin's masks**"...). - Proposed the first "double" holograms as a reply to the project "**Chapel of the Meditation popularized through the media**". - Built bridges between art and complementary sciences (physics, physiology, acoustic, sculpture) to produce "**Sonorous environment and interactive and enslaved visuals**".

#### PIONEER OF THE RELATION BETWEEN ART AND SHAPE MEMORY ALLOYS

- Finalized a new facet of metallic materials, "shape memory forms" (Nickel/Titanium) in California with a world leader in technology (1985/1989). These were destined to produce concepts of **Evolutionary Sculptures to Shape Memory Alloys**: the "**Totem of the Future**", the "**Circle of Life**", the "**Door to two Infinities**". These sculptures, although totally metallic, evolve in form with the transition from night to day, from season to season, after the metallic material has been "taught" about the predetermined forms.

#### CO-FOUNDER OF SPATIAL ART

- The first few foundations were set in the years 1975/80 describing several principles for creating artificial and luminous phenomenon in space. These were the fruit of reflection, laser beams or emission of electrons that could be totally visible from the planet behind a background of firmament or during day light. Confirmed and elaborated upon in Paris, Boston (MIT), San Francisco, Tokyo...the most renowned concept amongst them is the "**Celestial Wheel**", the project "**Venus+**" "**EsArt**"...

#### MESSAGES FROM MAN TO THE UNIVERSE (1986/87)

Conceived and produced the operation "**Messages from Man to the Universe**". An operation which involved collecting messages from the French population and its overseas territories for a period of seven months through the Minitel. More than 10,000 messages were emitted from the Radio Telescope at Nancy on the 26<sup>th</sup> of January, 1987 towards the heart of the galaxy. They shall reach the galaxy in 30,000 years and will definitively leave our galaxy in 100,000 years. (an operation supported by the international scientific community).

#### THE SPHERE OF MARS (1992/200?)

Initiated and produced the programme "**The Sphere of Mars**": evolutionary sculptures made from shape memory alloys destined to be symbolically deposited to Planet Mars, during a scientific interplanetary mission (the launch is to be confirmed on a future mission).

#### KEO (1994/200?)

Initiated and developed the concept of "**KEO**" that involves launching a satellite into orbit destined to return to Earth in 50,000 years. The satellite will carry with it messages that the people of today would like to transmit to their future great grandchildren.

## PRIZES AND INTERNATIONAL RECOGNITION:

- Winner of the **“ISAT NEW HORIZON AWARD 1987”** – **Leonardo** – **Berkeley** – **USA**. Prize awarded for the junction “Art/ Shape Memory Alloys” and the production of the first evolutionary sculpture made from shape memory alloys, nickel/titanium – the “Totem of the Future”- produced in the San Francisco bay.
- Winner of the **“TROPHY FAUST 1987”** – **Toulouse** (attributed for the junction “Art/ Shape Memory Alloys”).
- Winner of the **“CLIC D’OR 1998”** – **Paris**. Special jury prize awarded to the site, [www.keo.org](http://www.keo.org). (best artistic project, best site).
- Winner of the **“PRIX ARS ELECTRONICA 1999”** Linz (Austria). Prize awarded for the best project that links Art and Internet.
- Winner of **“PRIX AIR ET ESPACE 2000”** Megève (France).

## RELATION WITH INSTITUTES

- Member of the **EUROPEAN ACADEMY OF SCIENCE, ART AND LITERATURE** – Paris (since 1983). Participates in several reflections and international colloquiums, related to questions with perspectives; was lead to propose numerous global actions. One of the initiators of the creation of **“Global Ethical Committee for the Peaceful Utilization of Space”** (UNESCO, ESA, 1986), of the project **“Royalties/Garden/Earth”** (UNESCO 1986), co-initiator of the **“Global ethical committee for the utilization of science and techniques”** (1987) whose discussion was taken over by UNESCO and the Organization for Human Rights in October, 1994 at Trieste.
- **Member of the INTERNATIONAL SOCIETY FOR ART, SCIENCE AND TECHNOLOGY** – **Berkeley, USA** (since 1987).
- **Advisor at the CITY OF SCIENCE AND INDUSTRY** – **Paris (1980/85)**  
Is responsible for the presence of the junction Art/ Technology at the City of Science and Industry.
- **Official French representative at international conferences**  
European Conference of Philosophy – Athens 1985,  
Second Franco-Japanese Cultural Summit – Arc and Senans 1985../....
- **Consultant, advice and expertise for non-governmental organizations.**

## PUBLICATIONS AND BOOKS

- **Around twenty articles and communications**  
Mainly in the reviews: **“SPIRAL”**, **“AUTREMENT”**, **“LEONARDO”** in relation with the junction of Art/Sciences/Technologies and its theoretical and practical implications.
- **BOOKS (CO-AUTHOR)**  
**“Computer Technology and Artistic Creation: the Non-human Brains”** - Editions Denoël – Paris – 1971  
**“Mathematics and Art”** – Editions SPIRALI – Milan – 1984  
**“The Immaterial”** – Editions AUTREMENT – Paris – 1986  
**“Science and Sense: interdisciplinary research”** – Editions Du Mail – Paris – 1994  
**“Science and the Metamorphism of Art”** – Collection “The New Diderot Encyclopedia” – PUF – 1994

## LECTURES, CONFERENCES, CONGRESSES

- **Founding member of CETEC** (European Center of Technoculture) – University Paris-Dauphine
- **Lectures and conferences** at the University of Sorbonne, Paris-Dauphine, Jussieu, Stanford, Louvain...
- From 1980 to 1990, participated in several international congresses and colloquiums related to the theme **“Art, Science, Technology”** as well as to the reflection on the articulation of **“Art, Science, Economy”**.

## LIVES IN PARIS

Email: [jmphilippe@keo.org](mailto:jmphilippe@keo.org)