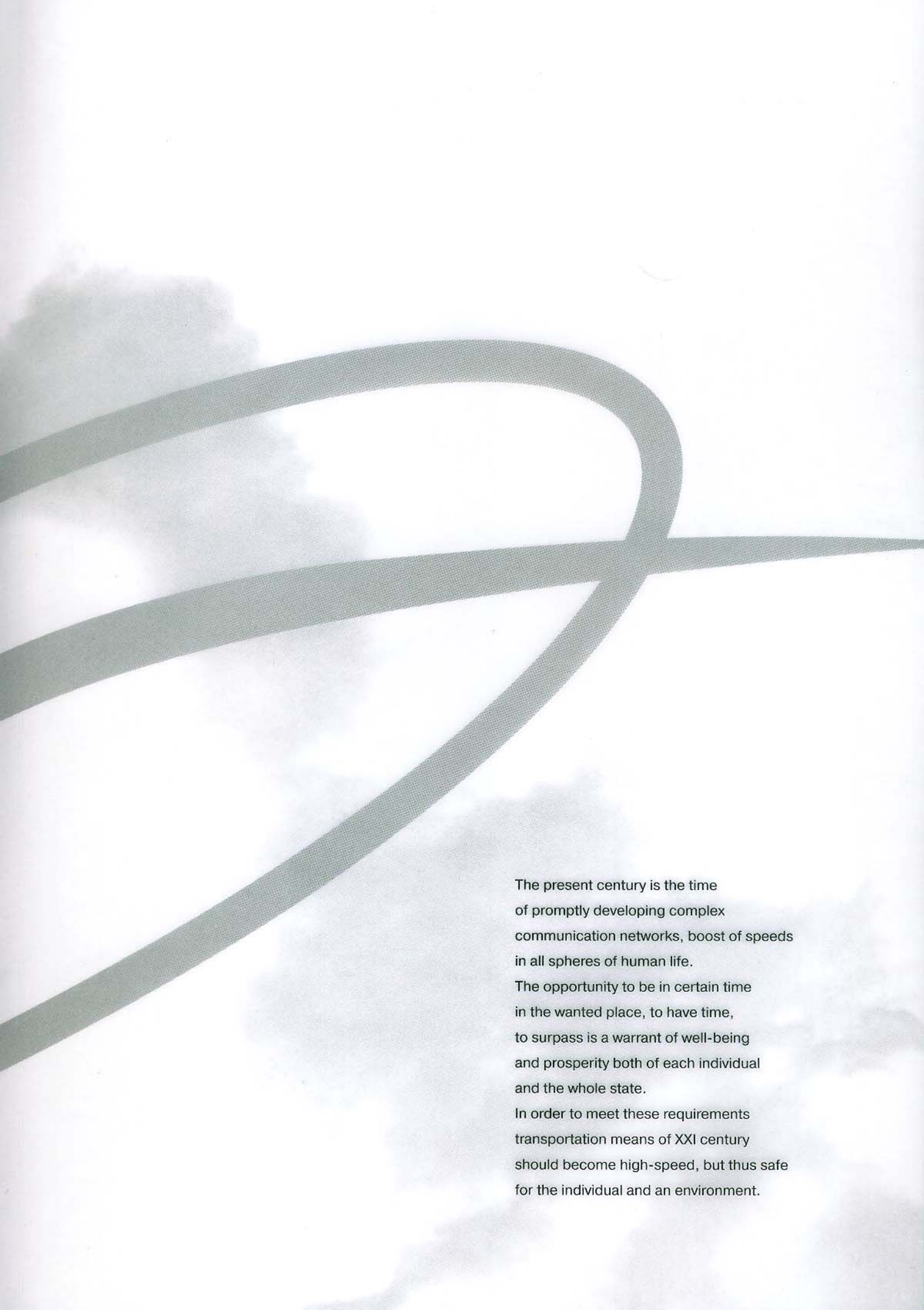
NTL



The present century is the time
of promptly developing complex
communication networks, boost of speeds
in all spheres of human life.
The opportunity to be in certain time
in the wanted place, to have time,
to surpass is a warrant of well-being
and prosperity both of each individual
and the whole state.
In order to meet these requirements
transportation means of XXI century
should become high-speed, but thus safe
for the individual and an environment.

Dear friends!

The company NTL offers an elegant technical solution for the ground transport communications, allowing to keep balance between aspiration of a man to speed and comfort and ecological potential of the Earth. New Transport Lines is a string transport, transport of the second level.

Integration of New Transport Lines into existing global communications will give a new impulse to development of transport and, thus, will essentially affect thinking and consciousness of the modern people, economy, geopolitics. Such offer is timely and actual. Introducing the string transport, our company participates in the solution of many existing and future problems of mankind.

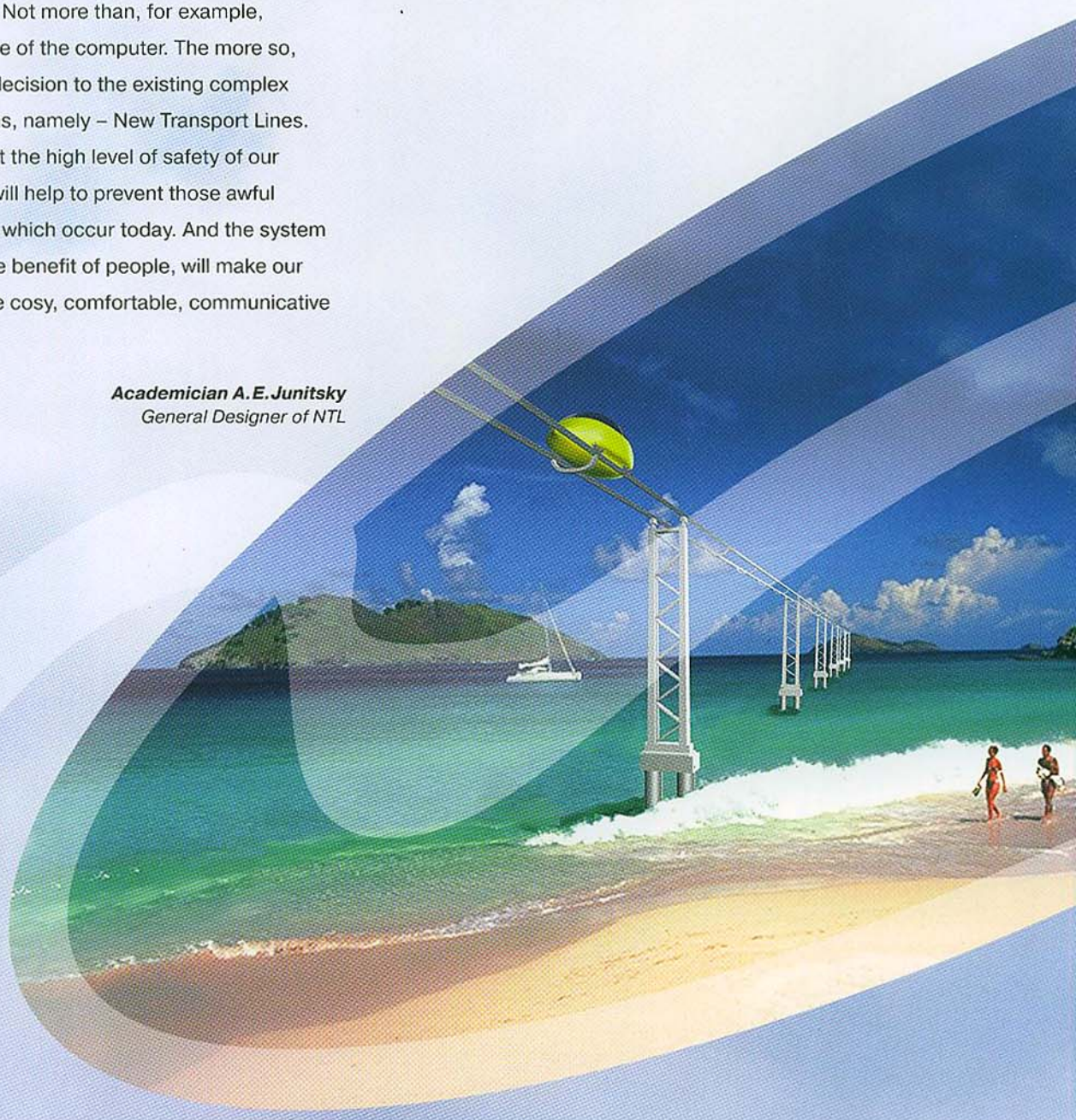
A.A.Kapitonov
President of NTL

Creating New Transport Lines, I thought about its future passengers, and also about problems of modern transport.
The super-cheap, non-polluting and safe transport capable for fifty of dollars to deliver the passenger from Kiev to Paris almost with aviation speed and railway convenience...
A fantasy? Not more than, for example, appearance of the computer. The more so, there is a decision to the existing complex of problems, namely – New Transport Lines.
I hope, that the high level of safety of our transport will help to prevent those awful accidents, which occur today. And the system built for the benefit of people, will make our world more cosy, comfortable, communicative and safe.

Academician A.E.Junitsky
General Designer of NTL

Support and recognition of NTL

For sceptics it is necessary to note, that the idea of creation and development of NTL technology was recognized and get support of several structural organizations of the United Nations, such as UNIDO, UNEP, UNDP, Global Ecological Foundation and many others. The centre Habitat at the United Nations, engaged in promotion of scientific and technical projects perspective for all mankind, has included this project in the list and has already allocated the second grant.



History and the facts about traditional types of transport

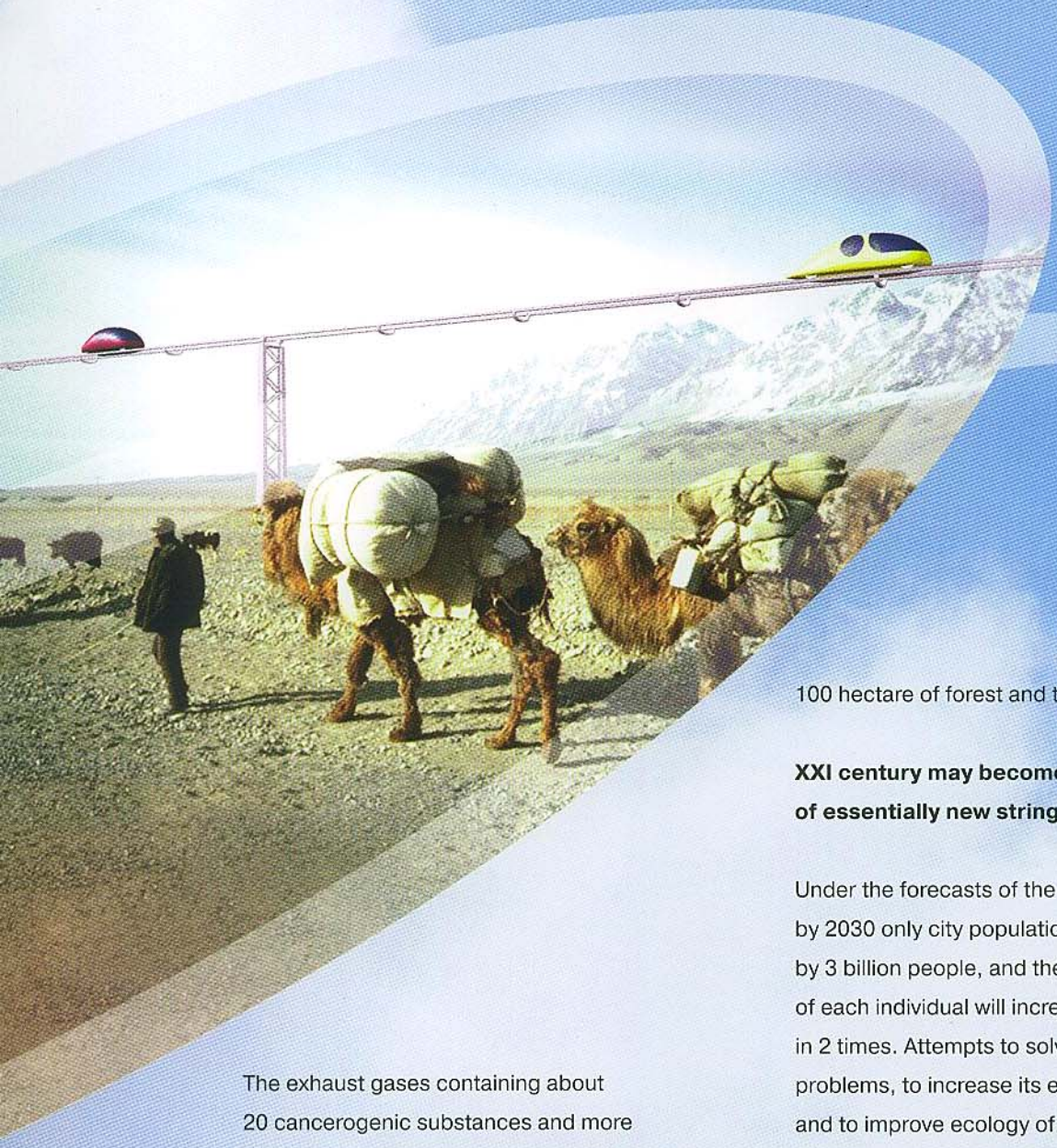
XIX century was marked by appearance of a steam locomotive. The first railway was constructed in England. After a while railroad construction was started in the United States of America, which at the end of XIX century within 10 years have laid more than 110 thousand kilometers of railway practically in the absence of mechanization and automation!
The network of railway lines, as if arteries, has connected cities and countries, raising a standard of living and economy of the state.
The next century has passed in an atmosphere of motor industry.
About 6 million kilometers of highways were constructed during this time only in USA.
This 23 times exceeds the distance to the Moon.
The territory equal to Greece was asphalted.

Automobile manufacturing put the United States on the first place among the prospering countries. Ford became personification of America. Such industries, as chemical and oil refining, metallurgy and mechanical engineering, connected to automobile industry, began to develop considerably.
High-speed airliners became one more gain of mankind: they have given us more advantages in comparison with ground types of transport: speed, comfort, comparative safety.
But development of a civilization in the field of transport technologies has huge drawbacks and consequences for the present time.

One of the leaders in connection with environmental contamination were and are transportation means.

The automobile can be named the most dangerous invention of the human being. Annually all over the world 990 thousand people perish on the roads, and should such statistics preserve for 100 years, about 100 million people will loose life.

of petroleum during tanker transportations, explosions on oil refineries. Modern high-speed air buses are also not less dangerous, each of them is equivalent to 5–8 thousand cars on toxicity of fuel combustion products. Burning dozens of tons of fuel only for one flight, the airliner damages irremiably the ozone layer of the Earth. Products of combustion are kept in an atmosphere for about one year, and in order to restore an ozone layer it will take



100 hectare of forest and the whole year!

XXI century may become an era of essentially new string transport.

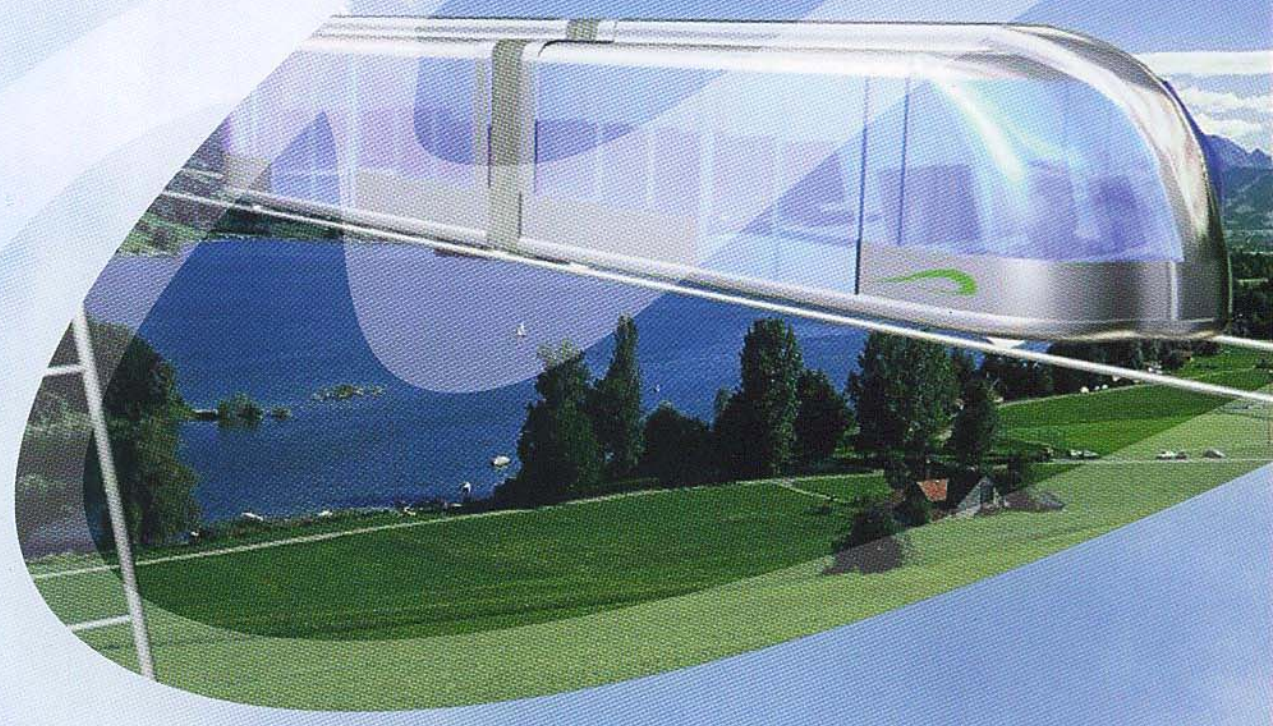
Under the forecasts of the United Nations by 2030 only city population will increase by 3 billion people, and the need for trains of each individual will increase not less than in 2 times. Attempts to solve communication problems, to increase its economical operation and to improve ecology of a transportation complex has been resulted in the idea that the development of existing types of transport is inexpedient. It is necessary to develop new technologies which will meet requirements of mankind in the future.

The exhaust gases containing about 20 cancerogenic substances and more of 120 toxic compounds are the basic source of air pollution in the cities.
Huge quantity of failures and accidents occur at the enterprises connected with automobile production and servicing, floods

What is New Transport Lines?

The basis of the system is the movement of transport modules – autoplanes – on a string-rail track, which is placed on anchor and intermediate supports. New Transport Lines easily allow to gain the speed of movement up to 300 km/hour, and in the long term up to 500 km/hour with much less energy consumption, than that of high-speed transport existing nowadays. Transport module differs from other transport means by the new streamline form developed by academician Junitskiy A.E. The module has passed aerodynamic tests in Petersburg Scientific and Research institute named by. A.N.Krylov and also has unique characteristics: its stream-line form appeared to be several times better, than that of high-speed trains and planes.
Wheels of the module are made of high-quality steel, have an independent mechanical suspension bracket and two flanges which allow them to follow a rail precisely and tightly hold to it. It is possible to use any kinds of engines in the transport module, for example diesel, petrol engine, electric motor on accumulators, or feeding from an external network.

Sring-rail track represents by two special rails-strings without steam along the whole length of a route. Rails are tightened between anchor supports established at the distance of 1–3 km from each other. String elements of rails and support structures of the NTLs are placed in corrosion-preventing surroundings, and are environmentalproofed by a special sheath and mechanically strong case, and the term of their service is about 100 years.
The transport modules may be controlled directly by the driver as well as by the onboard computer, which in its turn is supervised and controlled by the central computer.
Flights along the line are carried out by single autoplanes or echelons, in which transport modules are connected with each other by means of mechanical or electronic couplings.



Advantages of New Transport Lines are shown by numerous calculations, researches, constructions of mathematical models. But the most indicative, nevertheless, are experimental lines.

In July, 2003 a demonstration line will be launched in Ukraine in the town of Gostomel. A lay of the ground (river, marshes, forest and hills) allows to emphasize universal character of transport lines (they can be laid both in densely populated, and in remote areas) and to show one of the advantages of string transport – an opportunity to set the route on the shortest way.

There are also specific projects for Russia: construction of string transport system will make possible connection of the airports in Moscow (from Vnukovo to Domodedovo only for 20 minutes!), in Anapa and Sochi to lay the lines taking vacationers from boarding houses directly to a beach.

Implementation of these projects will allow to unload existing routes, to reorient a part of passenger traffic to higher-speed and more ecological type of transport.

And preliminary (but detailed enough) calculations show, that the pay-back period of total capital investments in such transport lines does not exceed 5 years, which is quite acceptable for such type of projects.

Universality of NTL

Haulage opportunities are applicable practically to any cargoes. NTL designers offer various cargo modules: multi-wheel platforms, containers for dry substances, piece and special cargoes, trolleys for ore, capacities for liquid products-reliable, adapted to fast loading and unloading. Special-purpose lines with smaller speeds of movement (for timber logging, intrafactory transportation, ore transportation from open-cast mines to power stations, removal of garbage, delivery of drinking water, etc.) are also developed. Such transport lines quite may compete even with an oil pipeline: carrying capacity (in one direction) is up to 20 million tons of petroleum products a year, and the self cost of transportation is 1,5–2 times lower than existing. Besides, transportation is possible in the tight, repeatedly used containers. Products, equipment will be delivered in the opposite direction. Thus time of freight traffic will repeatedly be reduced!

One of the actual applications of string technologies is construction of inexpensive, fast-constructed, wide-span automobile and railway bridges, pedestrian crossings, ferries. High-speed transport modules used as passenger transport, are designed for 20–25 persons. The sefl-cost of transportation of one passenger for 100 kms may make about a dollar, which is approximately 10 times more efficient, than similar transportation in the high-speed car. NTL is really general-purpose transport. Lines can be laid not only overland, but also along the coast line. At depthes up to 50 meters modules will go above water, at deeper waters they will move in underwater pipes-tunnels (on the bottom or in the thickness of water).

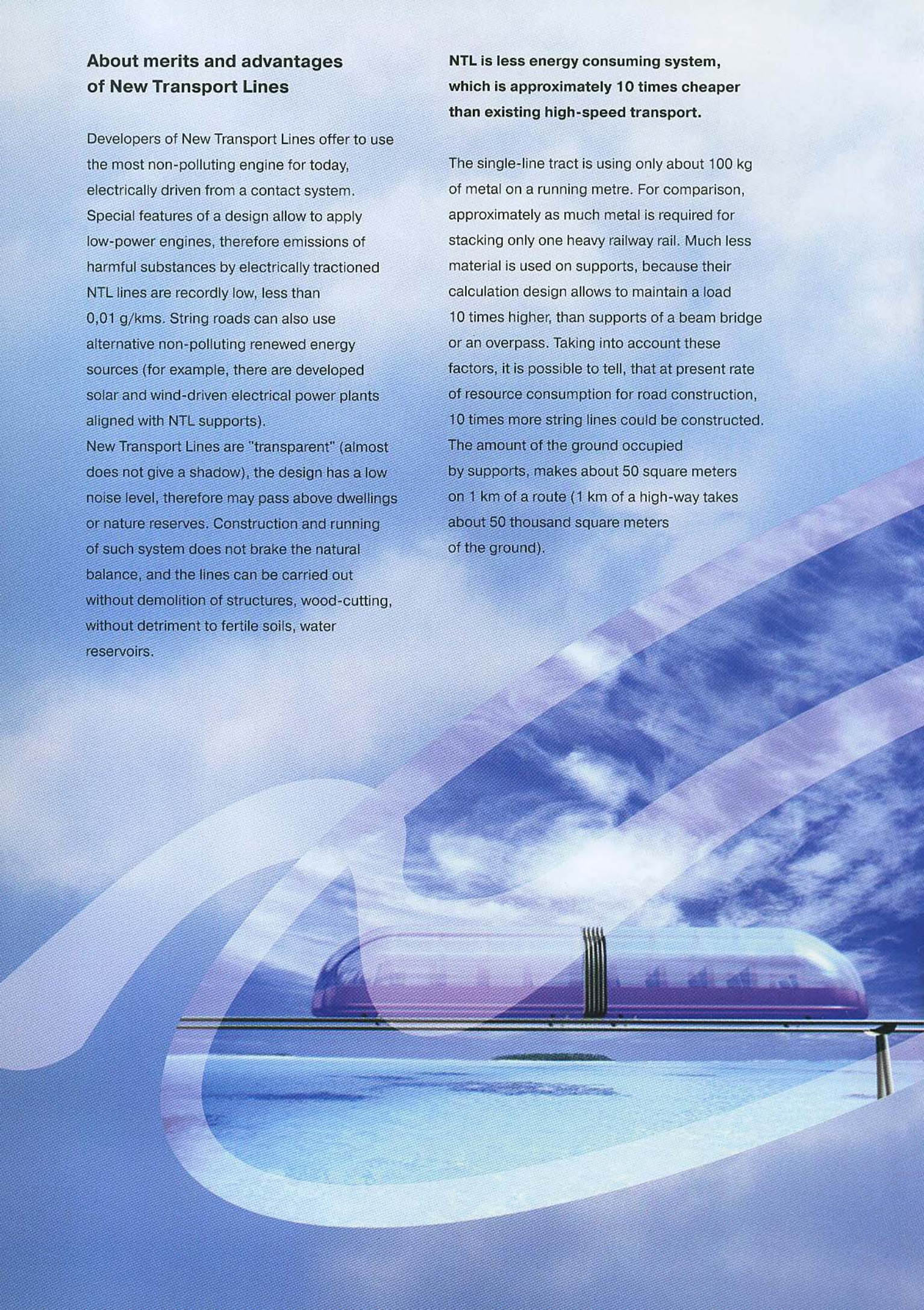
About merits and advantages of New Transport Lines

Developers of New Transport Lines offer to use the most non-polluting engine for today, electrically driven from a contact system. Special features of a design allow to apply low-power engines, therefore emissions of harmful substances by electrically tractioned NTL lines are recordly low, less than 0,01 g/kms. String roads can also use alternative non-polluting renewed energy sources (for example, there are developed solar and wind-driven electrical power plants aligned with NTL supports).

New Transport Lines are "transparent" (almost does not give a shadow), the design has a low noise level, therefore may pass above dwellings or nature reserves. Construction and running of such system does not brake the natural balance, and the lines can be carried out without demolition of structures, wood-cutting, without detriment to fertile soils, water reservoirs.

NTL is less energy consuming system, which is approximately 10 times cheaper than existing high-speed transport.

The single-line tract is using only about 100 kg of metal on a running metre. For comparison, approximately as much metal is required for stacking only one heavy railway rail. Much less material is used on supports, because their calculation design allows to maintain a load 10 times higher, than supports of a beam bridge or an overpass. Taking into account these factors, it is possible to tell, that at present rate of resource consumption for road construction, 10 times more string lines could be constructed. The amount of the ground occupied by supports, makes about 50 square meters on 1 km of a route (1 km of a high-way takes about 50 thousand square meters of the ground).



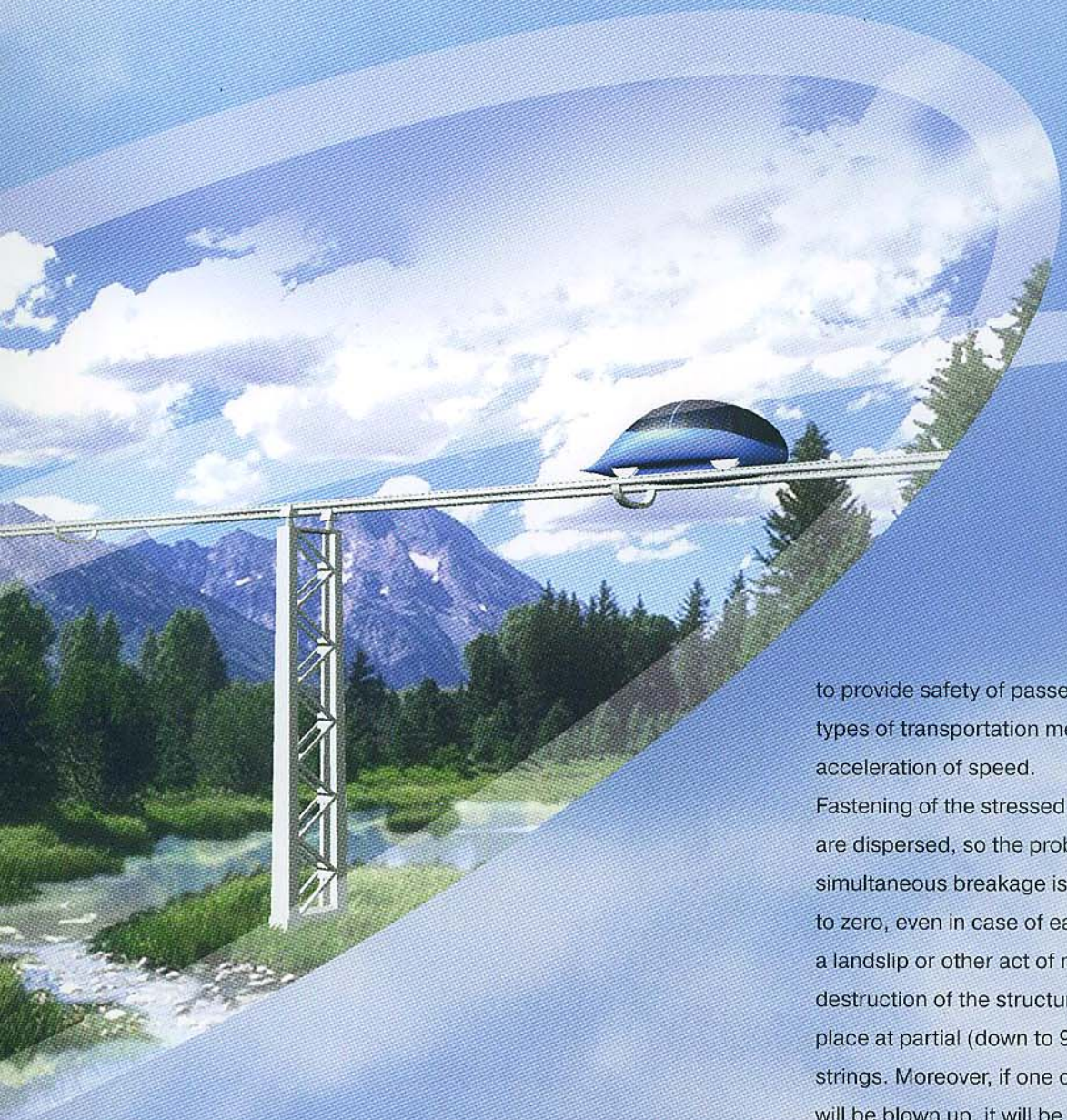
To lay a string line will cost 5–10 times cheaper, than construction of high-speed high-ways and high-speed railways, as it does not demand erection of embankments, bridges, digging of tunnels, etc.

The cost of NTL laying is comparable only to a tramway construction, one of the cheapest types of transport in construction.

Low consumption of materials and cost of construction with high traffic capacity of the lines will provide for low self-cost cost for passenger transportation and freight traffic .

The safety of NTL

It is necessary to note the safety of NTL.
It is transport of the second level, which is not overlapping with the usual transport streams (such as automobile and railway). It will allow to avoid many causes of accidents: "jams", mechanical obstacles, adverse weather conditions and other factors which do not allow



to provide safety of passengers in traditional types of transportation means under acceleration of speed.
Fastening of the stressed NTL string elements are dispersed, so the probability of their simultaneous breakage is practically equal to zero, even in case of earthquake, flooding, a landslip or other act of nature. An instant destruction of the structure also will not take place at partial (down to 90%) breakage of the strings. Moreover, if one of the anchor supports will be blown up, it will be possible to avoid accident: the remaining supports will cope with additional load.
Safety on the line will be also provided by coordination and control of all functional systems by the central computer.

Value of string transport for the world community

According to their basic technical and economic characteristics NTL surpass existing types of transport. But, despite of the obvious advantages, New Transport Lines do not apply for a dominant role, and will not supersede existing types of transport, but only will help to unload them. This system has its own niche at the market of transport services.

One of the real and effective ways to implement the project may be mixed financing with participation of states, international organizations and commercial structures, as well as venture capital.

NTL may become one of cheap, fast-constructing and least energy consuming transport systems, and therefore they represent strategically favourable sphere of capital investments.

The network of transnational roads constructed with the help of this system, will allow to unite the world not only by means of the Internet and bank operations.

New Transport Lines might be applied in so-called Creta corridors, which are planned to be constructed for unification of European and Asian transport standards.

The cost of high-speed railway construction is about 20 million dollars for kilometer, and there is a need to construct tens of thousand kilometers.

It demands huge financial investments.

The train on magnetic suspension is even more expensive and beside is very noisy and is not safe. New Transport Lines might become both a component of such high-speed corridors and transportation mean of XXI century – affordable, non-polluting and safe.