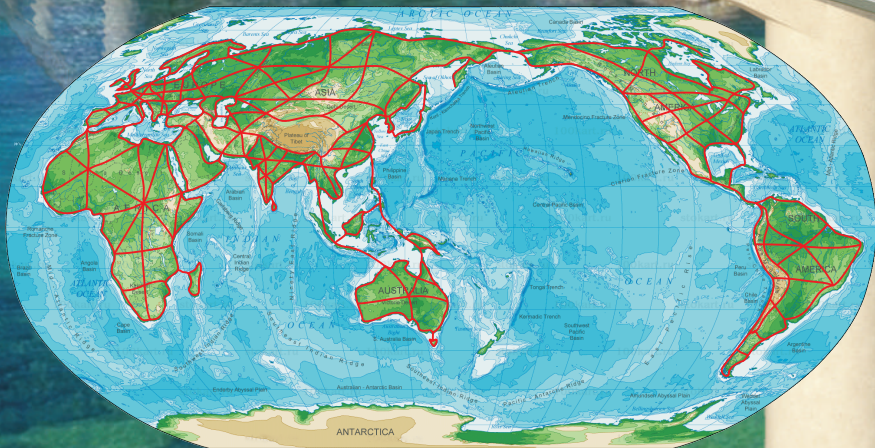




# Transnet







## General Constructor

# YUNITSKIY

## ANATOLY EDUARDOVICH:

- Designer of technologies STY
- Author of 150 inventions

## Acting member (Academician):

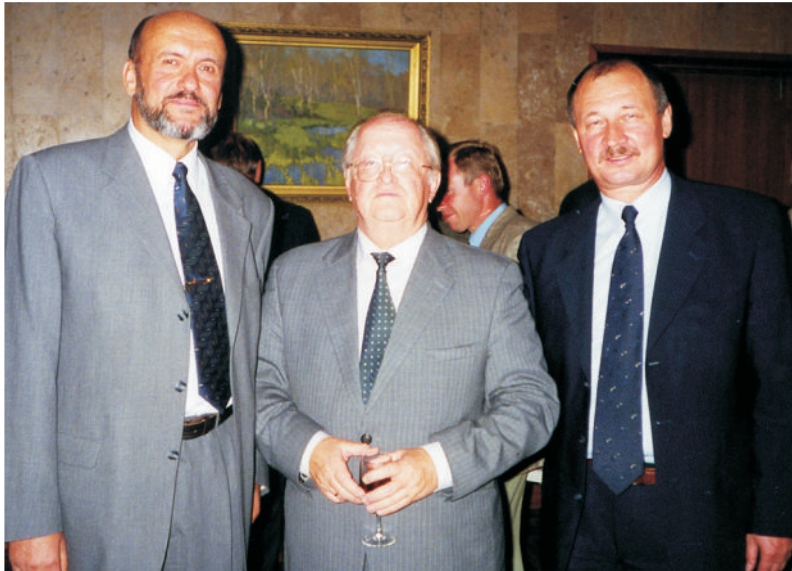
- Russian Academy of Natural Sciences
- International Academy of Science and Business Integration

**Grants from the United Nations received for development of STY**





# Historical chronicles



Chairman of Central Bank of Russia  
Victor Gerashchenko



Governor of Krasnoyarskiy region  
Alexander Lebed



Chairman of Liberal-Democratic Party  
of Russia Vladimir Zhirinovskiy



Governor of Moscow Region  
Boris Gromov



Governor of KMAO-Yugra  
Alexander Filipenko



Governor of Nizhegorodskiy region  
Valery Shantsev





# Public recognition of STY



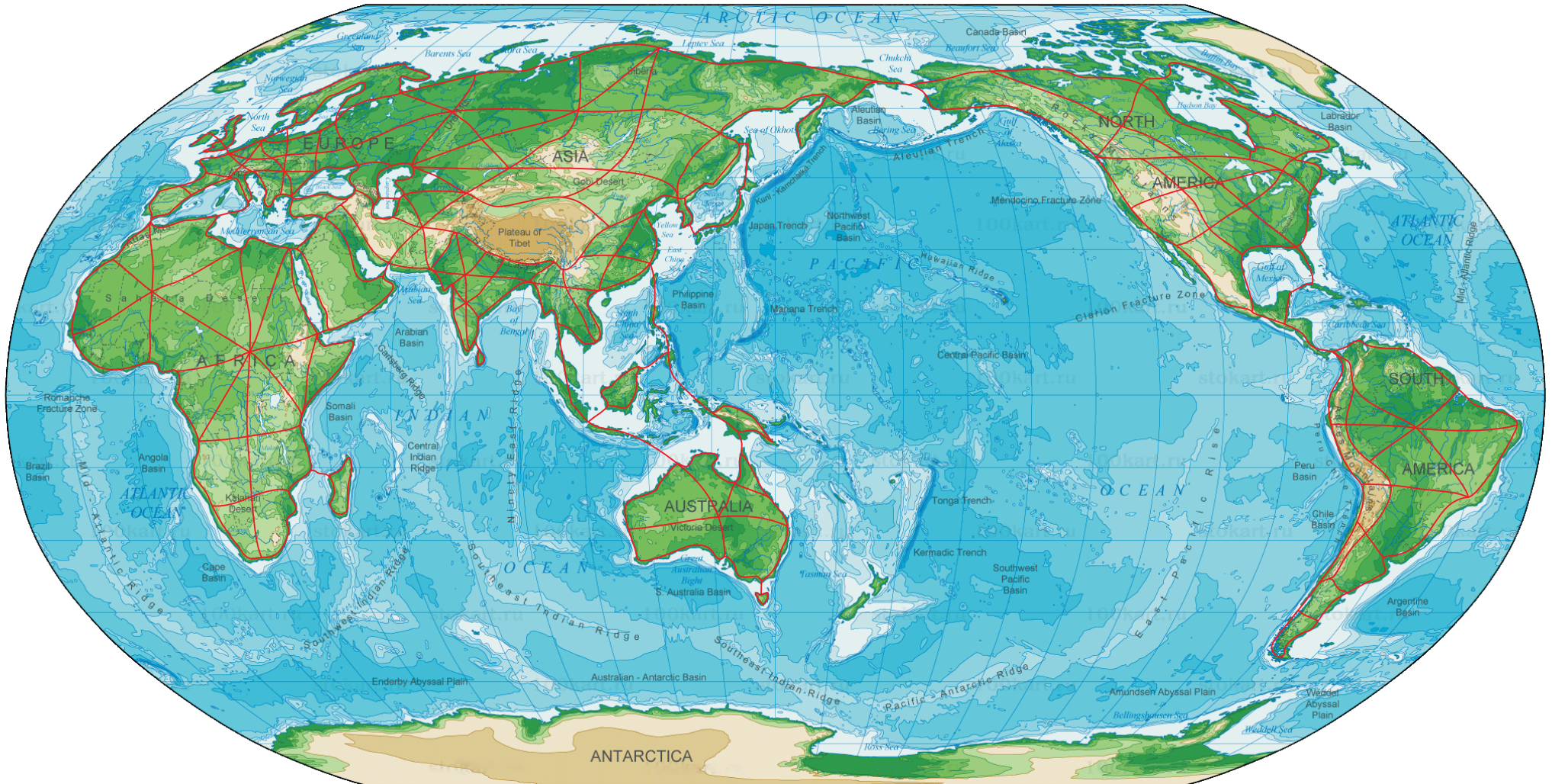








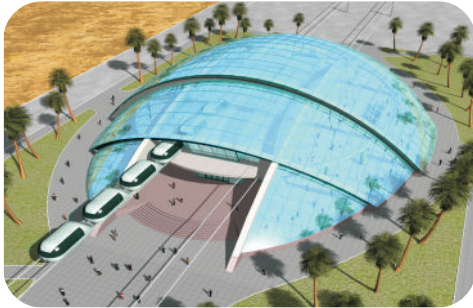
# Transnet based on STY technology







# The advantages of STY



**Safety** - the "second level" of accommodation, special system of rolling stock, ten-fold safety margins of the track structure and its high resistance to acts of vandalism and terrorism, the precise logistics, that are not depending on climatic conditions, will reduce the accident rate in STY system (with the death and injuries of people, domestic animals and wildlife), about a thousand times in comparison with road transport. The safety of string lines will be higher than in aviation.



**Ecology** - minimum land acquisition, the absence of embankments, excavations, culverts, deforestation and other similar works, the possibility of building in fragile ecosystems (permafrost, tundra, taiga, jungles, mountains, deserts, sea shelf, etc.) significant reduction of resources, multiple improvements in energy (fuel) efficiency of rolling stock and low noise level, will preserve the existing natural landscapes and ecosystems.



**Savings** per kilometer of road (during construction):

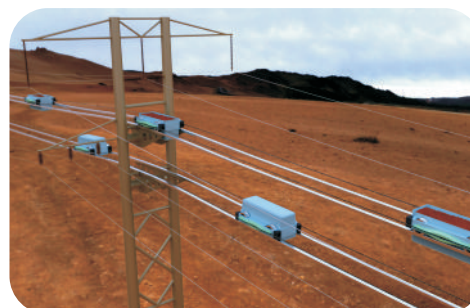
- Steel - 500-1000 tons (compared with high-speed monorails);
- Reinforced concrete - 15-20 thousand cubic meters (compared to overpass of high-speed railway);
- Land acquisition - 5 ha, volume of earthworks - 20-30 thousand cubic meters (compared to the mounds of traditional rail and auto road).



**Profitability** – "second tier" road building has much lower cost, reduced operating cost (fuel / energy, maintenance, depreciation and repair), while ensuring the volume of traffic at the level of railway, tram and subway, and with the few times reduced cost of transportation. Construction of any STY road pay-offs for 3-5 years.



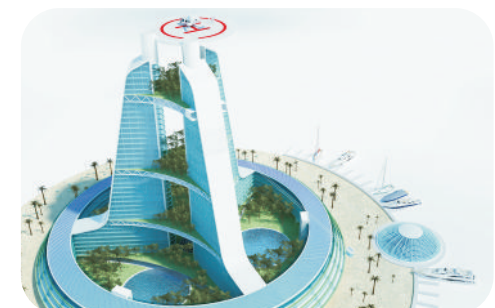
**Infrastructure** - creating a network (in 3D) of cargo-transport infrastructure, combined with electricity, television, radio and multimedia communications and nanotech industrial technology, wind and solar power and other alternative energy sources, exports of Russian breakthrough technologies, the development of applied science; changing the world of logistics and the mentality of societies.



**Track structure** of string system is cheaper than road, rail and monorail.

**Transport vehicle** goes at a speed of 360 km/h, fuel economy is more than 4-6 times compared to high-speed train, compared to sports car - by 15-20 times, with reduced cost of rolling stock - 2-3 or more times (one seat).

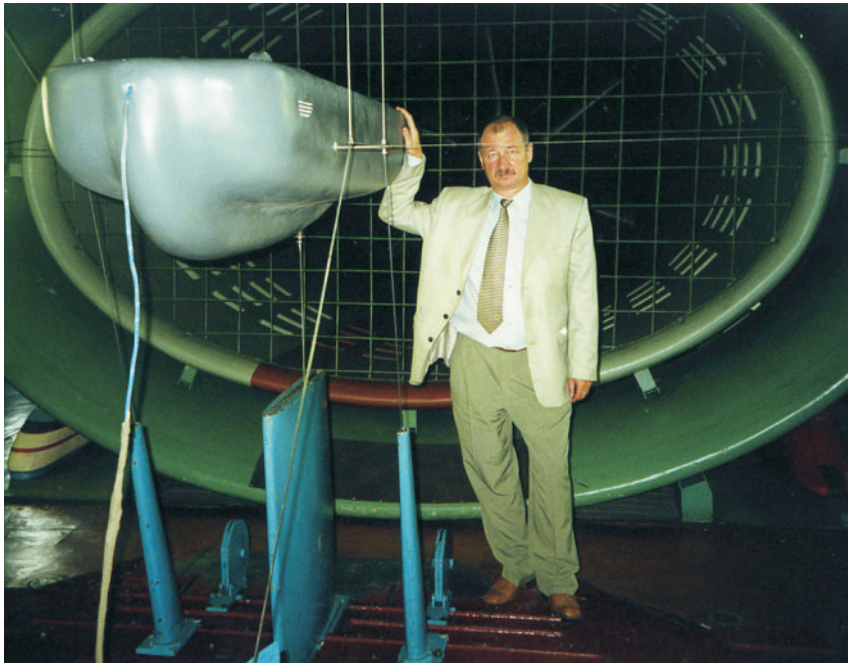
**Stations and depots** are cheaper than rail and aviation infrastructure (with the same volume of traffic).







## STY Aerodynamics



Drag coefficient of yunibus —  $C_x = 0.079$   
(sports car is 0.34).

This will reduce the required drive power of 40-seat yunibus, for example at a speed of 450 km/hour, at 1870 kW.



Specific fuel (energy) consumption in comparison with a sports car is reduced by 12 times, with rapid rail train by 7 times.





## STY Experimental track







## STY Experimental track with mobile laboratory







# The Russian Academy of Sciences



The Russian Academy of Sciences  
The Establishment of the Russian Academy of Sciences  
Institute of Transportation Problems named after N.S. Solomenko RAS  
199178, St. Petersburg, Vasilievsky Island 12<sup>th</sup> Line, 13  
Tel. (812) 321-97-42, Fax (812) 323-29-54, E-mail: belyi@iptran.ru

“I assent”

Director of Institute of Transportation Problems  
Named after N.S. Solomenko RAS  
Honoured Worker of Science of RF  
Doctor of Engineering Sciences, Professor  
Belyi O.V.

Executive Summary  
Of Innovative Transport Technology  
“String Transport Unitsky”

## I. Introduction

Analysis of transport state-of-the-art and its perspectives was carried out as the part of the Transport Strategy of Russian Federation till 2030. It proves that there are a number of limitations for transport development in Russia. Among them one can mention high rate of capital and energy output, severe climatic conditions, long period of project implementation, low transport infrastructure payback.

In such conditions formation of competitive transport services market is impossible without progressive achievements of techniques and technologies which are in conform to the security standards. The most important development direction becomes the implementation of innovative technologies in transport sphere. Therefore, introduction of Unitsky String Transport (STU) may become one of the most perspective directions in innovative transport technologies development. In November, 2008 Transport Committee of State Duma of the Federal Assembly of the Russian Federation admitted STU to be the best innovative project in terms of Consultative Council “Transport unites Russia” on project “Innovative Types of XXI Century Transportation in Russia”. STU was also recommended for early implementation to the economic scheme of the country.

String transport is the transport of “the second level”. Its infrastructure doesn’t need great deal of land resources. STU has spans (from 30-50m to 1-2km) between supports which provide STU passing through swampy, sand and mountain terrain, water barriers, boreal forest, cold desert and above ever frozen ground. STU has large energy efficiency and is less capital-intensive in comparison with monorail, elevated roads with magnetic levitation trains or high speed railways. STU is resistant enough to atmospheric effects, earthquakes, floods and other natural disasters. STU system meets Russian standards SNiP (Construction Standards and Regulations) and GOST (all-Union State Standard), has Russian and international patents. Basic compounds and details of the system have been tested and are certified in accordance with

“... STY is the most cost-effective transportation system from all known. In comparison:

- plane — 8 times,
- rapid railway — 3 times,
- train on magnetic suspension — 9 times.”





# ProMet Engineers (Australia)



File Ref: E1624

7 September 2010

Managing Director  
String Transport Systems Limited  
Level 2, 62 Wyndham Street  
Alexandria NSW, 2105

Dear Victor

## String Transport Systems Technology

ProMet Engineers Pty Ltd (ProMet) provides project management, process plant design and consultancy services to the Australian and international metallurgical and process industries. It is committed to providing state-of-the-art technology engineering and solutions to its clients, incorporating the principles of sustainable development to resource processing.

The core expertise of the company lies in the processing of iron ore, from primary crushing of the feed ore through to the processes and unit operations required for the production of steel products and their associated infrastructure. Its employees have had many years of experience of the design of plants and processes covering the full range of process options for iron ore, from primary beneficiation of magnetite, hematite and earthy ores, to the production of steel products and their transport to ports for export. In addition, ProMet has similar process expertise and experience in non-ferrous mineral processing.

As can be seen on the following pages ProMet has been involved in many iron ore (hematite) studies for potential iron ore projects in Western Australia, in particular. One of the major costs associated with these projects is the cost of transporting the product to a port and onto a ship. Traditionally, these costs are based upon the use of road haulage or rail transport or for shorter distances, overland conveyors. ProMet also has extensive experience in magnetite iron ore projects and these also have similar transport infrastructure costs but have the added advantage of being able to consider the use of the more economic slurry pipelines, if suitable conditions exist.

At times, the cost of a project's transport infrastructure requirements dwarfs the cost of the processing plant facilities and therefore a technological solution to reduce these costs and/or transfer of the cost into operating costs will be attractive to the mining industry.

ProMet has reviewed the technological solutions proposed by String Transport Systems and, from the technical information and costings provided, believes that this technology may provide a cost-effective method of getting the product to the port. This is due to the inherent reduced capital cost and lower operating costs basis of the technology. Furthermore, the system is not subject to the same physical constraints as other technologies as a more direct route to the port can be investigated, leading to further reduced capital and operating costs and shorter cycle times.

"... String Transport Systems' technological solution offers the potential for a shorter implementation period as the combined effects of:

- less actual land disturbance;
- lower environmental impact;
- construction methodology, may reduce the approval and construction timeframe."





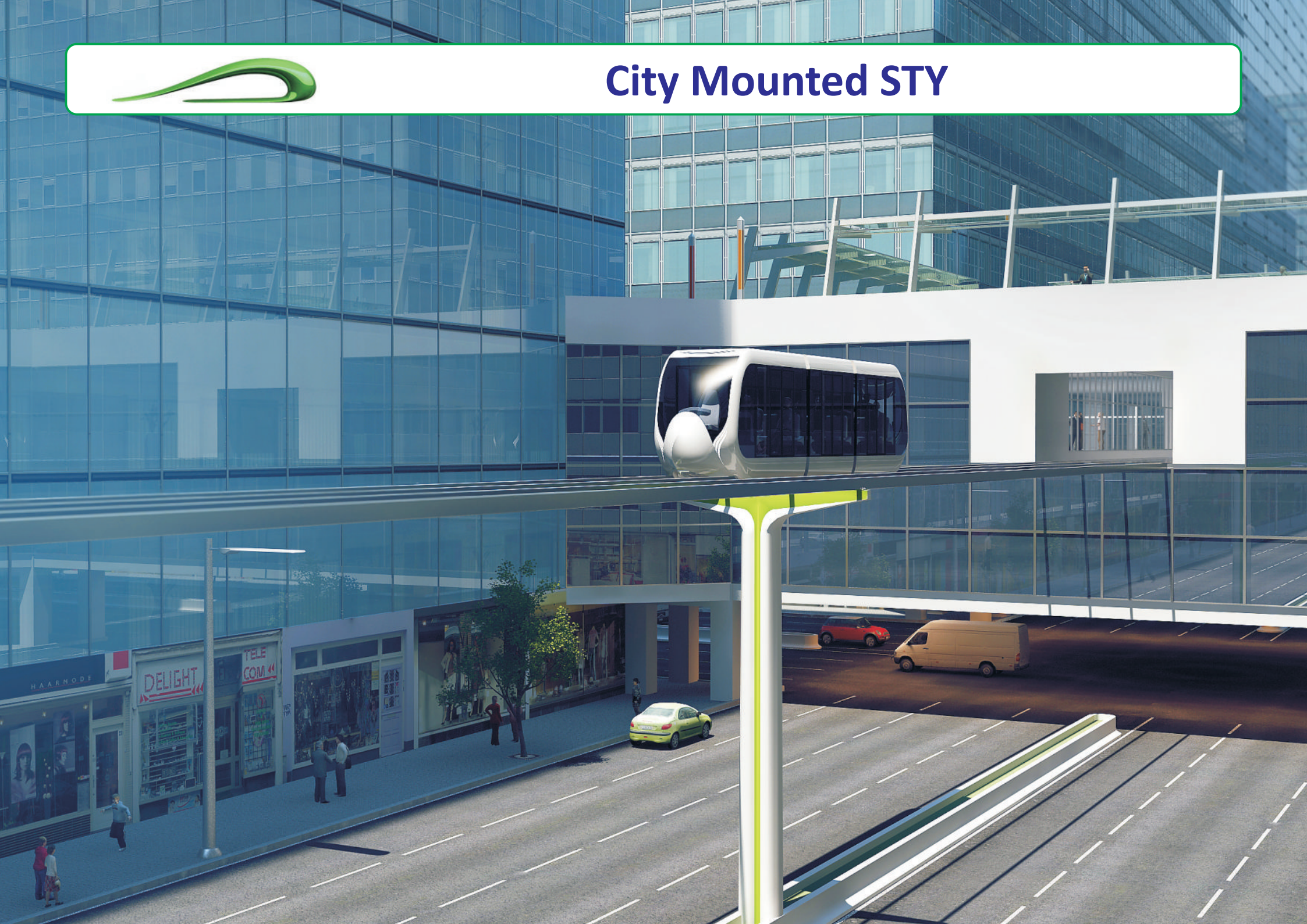
# Rapid STY







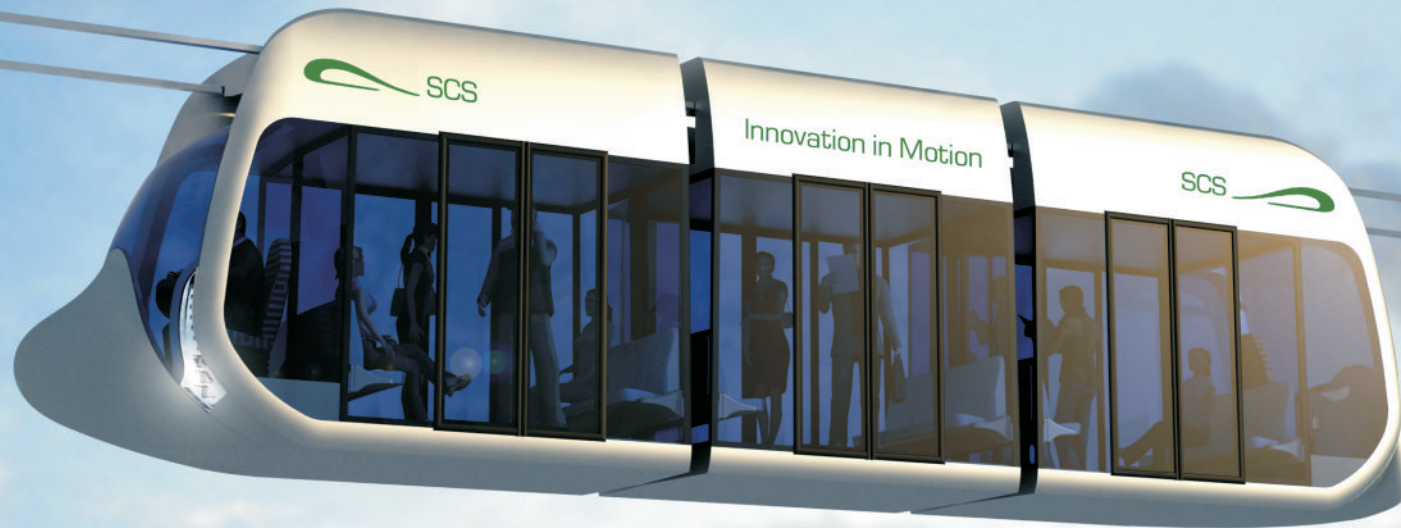
# City Mounted STY







# City Suspended STY







## High-rise STY



- Solves city traffic problems by building a network of high-rise buildings, having above-the-ground transport connection
- Allows the organization of megapolicies over large areas, while improving level of environmental in the residence of population





# Cargo Mounted STY







# Cargo Suspended STY







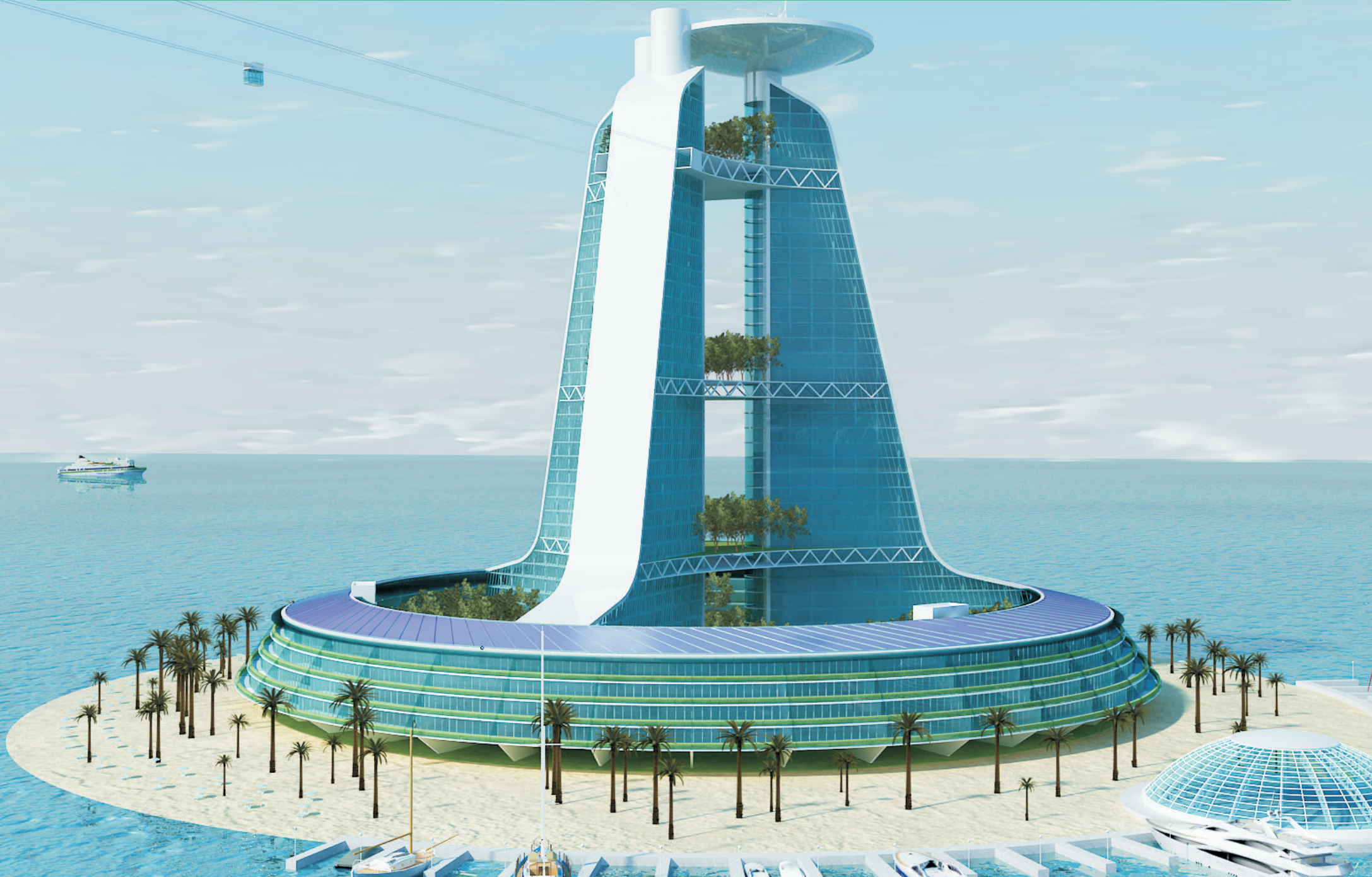
# Cargo port STY







# Development project based on STY







# STY System "Coast — Island"

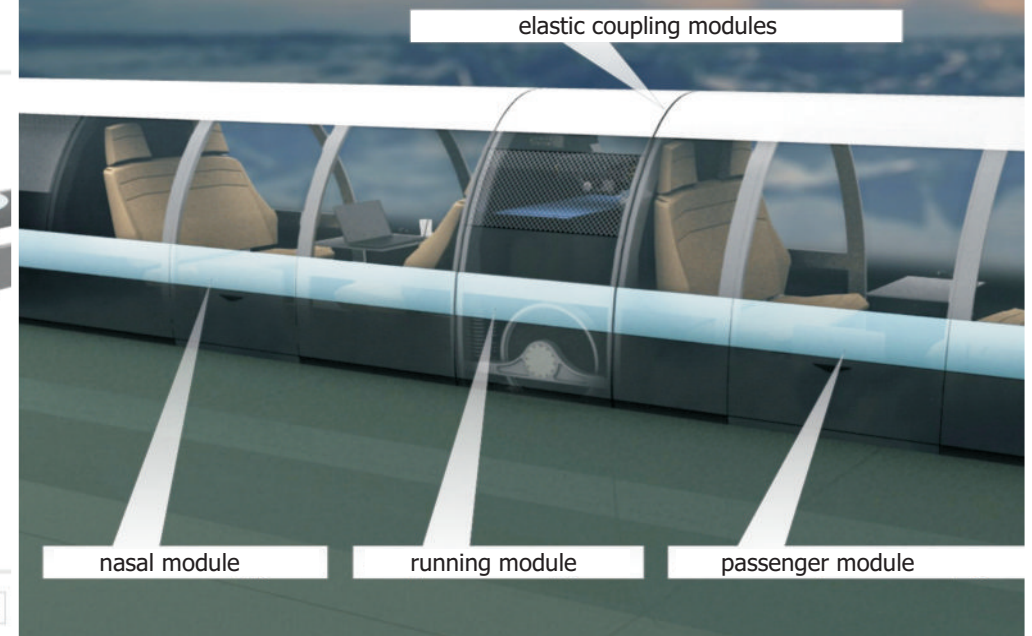
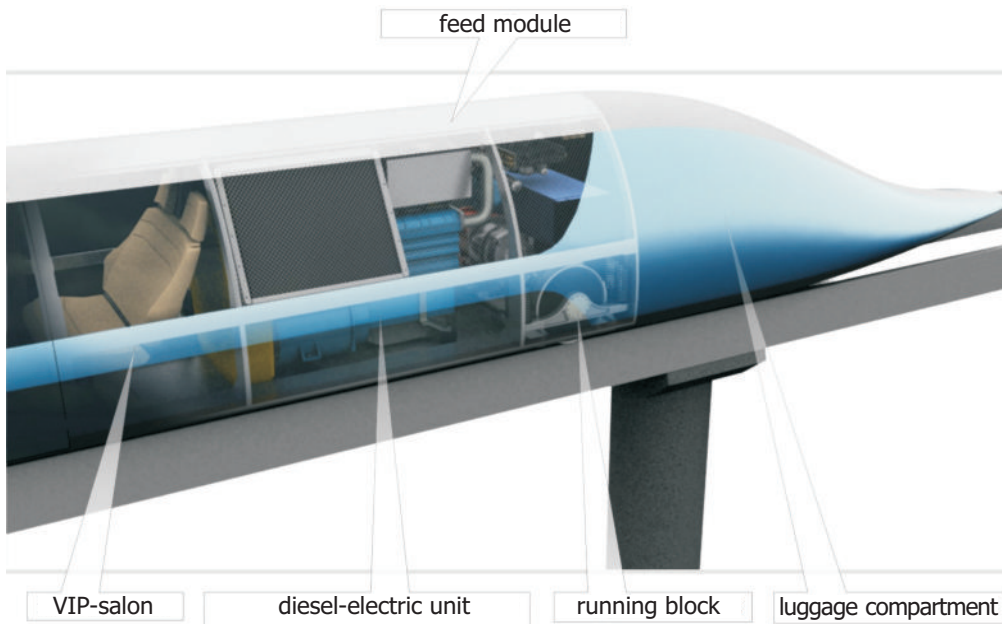
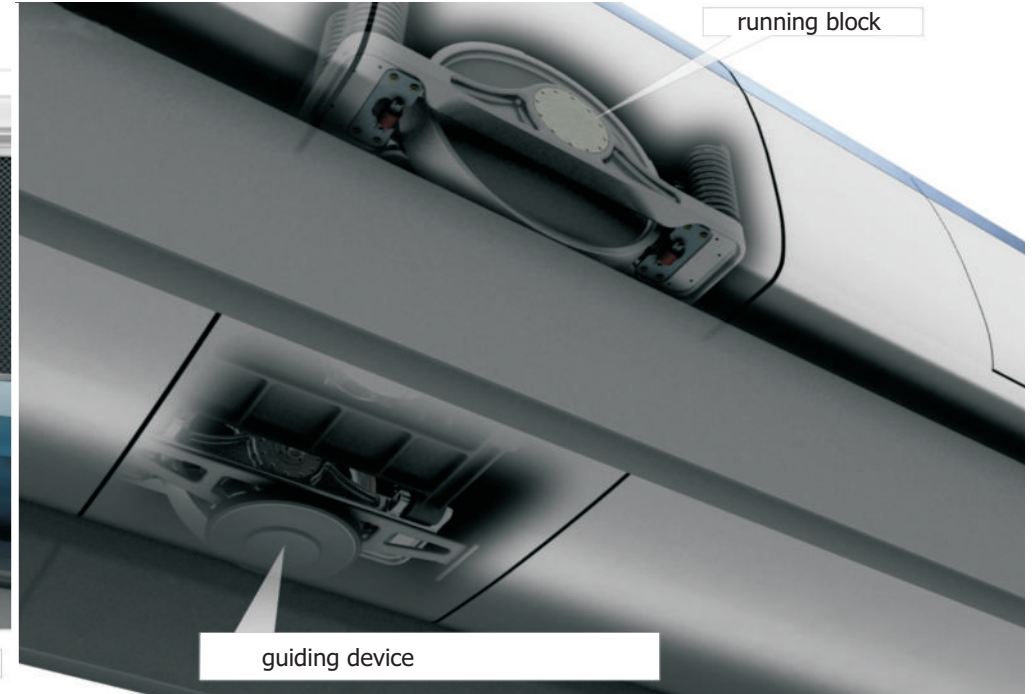
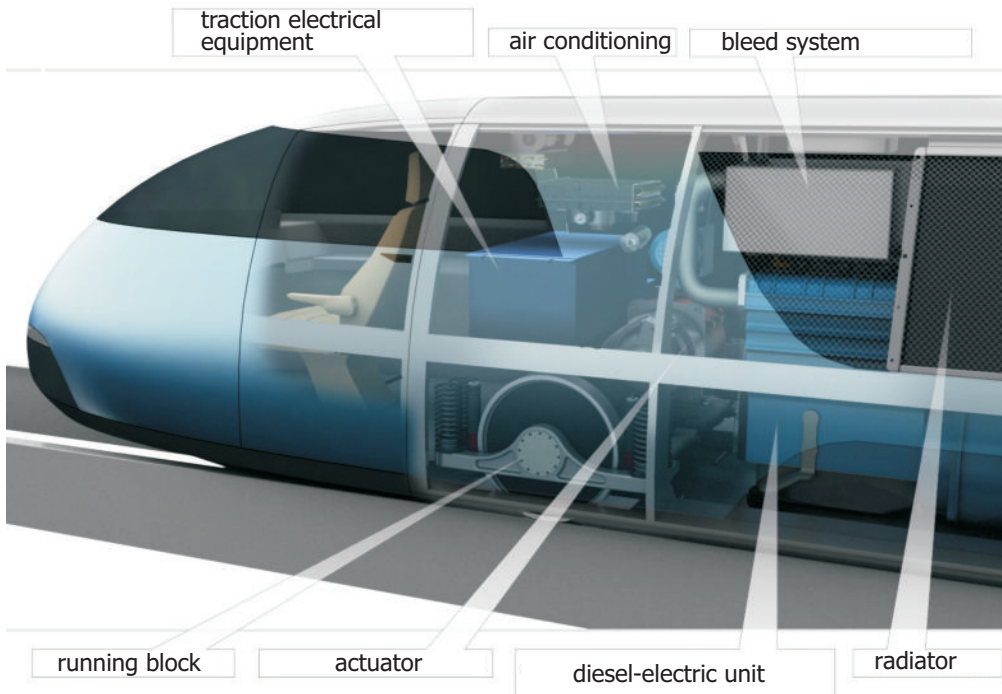


  
String Technologies Unitsky





# The layout of rapid yunibus







## String rail STY at 1:2 scale

