IAT
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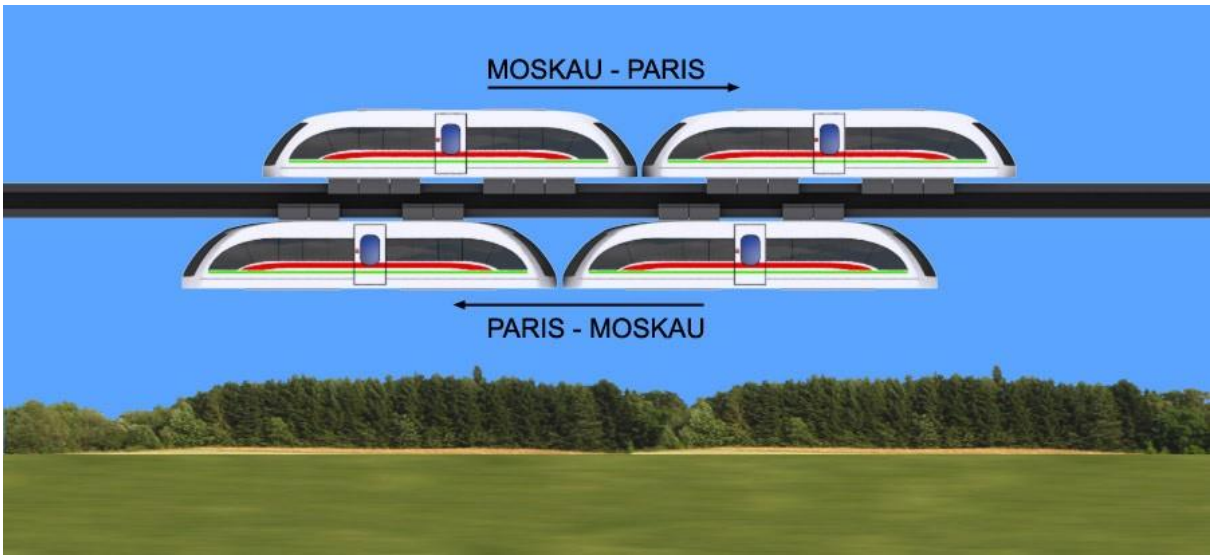
INNOVATION OPTIMIZATION

Magnetic levitation system with
double-decker road design

"Anyone who perceives innovation as a headwind is knowingly going in the wrong direction"



MAGNETIC LEVITATION TECHNOLOGY
AS A FURTHER DEVELOPED INNOVATION
OPPORTUNITY FOR GROWTH AND EMPLOYMENT,
LOGISTICS AND MOBILITY, INDUSTRY AND THE
ENVIRONMENT BY EFFICIENTLY INCREASING PROFITABILITY,
FLEXIBILITY AND SECURITY

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Complete Table of Contents Patent Specification Page

Excerpt of key points of technical information of the patent specification

A – Logistical-economic technology linkage

Exploitation of system-inherent economic advantages to reduce operating costs by:

⇒ lower personnel requirements due to the fully automatic, redundant, and low-wear system in the interchangeable modular principle. This allows in addition to a driverless Driving operation significant personnel savings in the maintenance, repair, spare parts and ticket sales area.

⇒ lower maintenance, repair, and spare parts costs, as the non-contact components and systems of the vehicles and the track do not wear out and because of the hovering independent of the liable value, neither axles or gearboxes nor overhead lines, signals, barriers and/or traffic lights can be maintained or repaired due to the system. In addition, all components have a longer service life due to their wear-free use. Maintenance and repairs of the track as well as any malfunctions of the vehicles occurring during driving operation are carried out by and from appropriately equipped repair vehicles. The modular design of the system facilitates repairs through simple, time-saving replacement of components, motors, and aggregates, among others.

⇒ low energy consumption far below the values of conventional transport systems. This is essentially based on a power supply of the Driving distances, a consistent aerodynamic lightweight construction of the vehicles as well as the achievable reduction of the vehicle weights by placing half of the drive in the track with correspondingly positive effects on the acceleration and speed of the vehicles. The resulting higher transport performance of the vehicles leads to smaller vehicle fleets with corresponding cost advantages due to circulation.

⇒ use of existing infrastructures. By means of a corresponding connection to i.e., existing stations, industrial and loading centers with route versions along or via existing traffic routes result in both efficiency and cost advantages. This helps to avoid the expenses incurred for the acquisition of new areas for buildings and routes, including the associated planning approval costs, in favor of a reduced operating cost and Capital expenditure. The feeding of the elevated tracks to the desired ground-level infrastructures as well as their exit is carried out using the positive slope capabilities of the system by continuously reducing or increasing the support heights.

⇒ there are no loads on the track. Its wear is low, as it is not exposed to shock loads from driving, centrifugal forces due to trass inclinations
magnetically supported and the forces from the driving dynamics are evenly distributed over the entire length of the vehicle and are directed into the track. There is a quasi-stable equilibrium between the magnetic forces that attract upwards and the gravity of the vehicle-side hovering package. As a result, this means an extended service life, i.e. usage time of the track with the resulting positive Cost savings. The supports for the elevated tracks can also be prefabricated cost-effectively in lightweight construction and contribute to a positive cost level in terms of maintenance and repair due to low loads.

⇒ reduction of claims for damages from conventional accident occurrences or ecological damage. Crossing-free, above-ground elevated driving in just one Directional design without any oncoming traffic, free of accidents and emission-related pollution of fauna and flora, excludes conventional damage with possible consequences for damages.

⇒ effort relief of the road. The use of the system leads to a slowdown in the volume of vehicles in road traffic with corresponding savings potentials in investment, ecological and energy aspects. These are further reduced using magnetic levitation technology, by means of the use of alternative energies, by reducing the amounts of energy used on the petroleum and gas side in road traffic. As a result, the environmentally harmful soot and CO2emissions are reduced accordingly.

⇒ extension of depreciation periods. Since the system works wear-free, this inevitably results in longer usage times. Economically, this leads to longer depreciation periods and thus at lower depreciation amounts per year.

⇒ integration of private-sector operator and participation solutions. The introduction of the system opens all possibilities for the state to integrate the Private sector for the construction and operation of the system via e.g., Consortium solutions from the construction and energy, transport and vehicle as well as financing industry as a consortium or AG.

⇒ Employment and growth using the system across scales, regions and countries. From an economic point of view, this represents a sustainable stimulus for growth and employment for each country, because of the comprehensive breadth and depth of the sectors it affects economically.

These include, in particular:

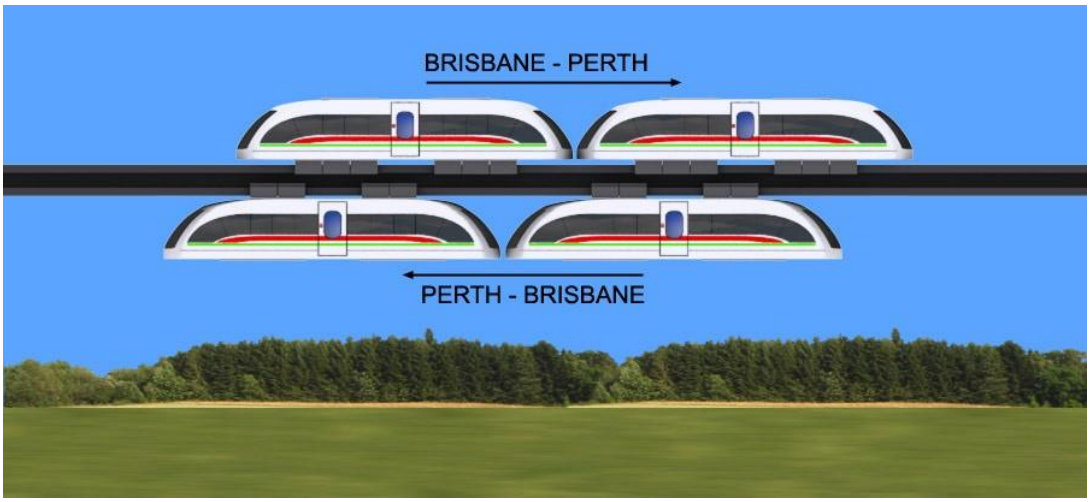
> Research and engineering, planning and surveying, construction and financing, energy and chemistry, measurement and control, logistics and transport as well as the metal and steel, vehicle and Motor, equipment and container, electrical and electrical engineering, cable and plastics, computer and photonics industries and, of course, the service industry.

The construction industry concerned is of particular importance both as an economic engine and as a job creator in the unskilled low-wage sector. Thus, in addition to citizens and industry, the respective state also participates on the revenue side to a corresponding extent in the technological-economic, mobility and employment-triggering System Impacts. The system export on a license basis continues to lead to cross-border value creation potentials. The export countries include those exporting countries with natural long-distance distances as well as sun-rich oil and natural gas, as these can ensure system operation free of silting and rust hazards by solar technology, while conserving their energy reserves. Since in snow and frost areas, to avoid any ice clumps, the tracks are electrically heated, ecologically justifiable, areas such as Alaska or Siberia can also be developed.

B -Presentation of the efficiency-enhancing further development of the elevated 2-route track system (Thyssen-Krupp) to 1-path track system according to IAT (patent specification de 102 09 319c1)

Despite the forward-looking advantages of the achieved state of magnetic levitation technology with its worldwide application possibilities for long-distance transport,and although Europe in particular urgently needs a more uniform, faster and safe as well as more ecological interconnected transport system without mixed operating problems with improved connections to Eastern Europe As an alternative to the road threatened by a heart attack, politicians have not yet been able to decide on the consistent use of magnetic levitation technology. This is due on the one hand to generally tight budgetary situations of the individual states without great financial leeway for the supporting promotion of innovative high technologies, and on the other hand to gained negative, too expensive train path financing experiences of a ground-level passenger transport use of high-speed trains. In addition, there is the lack of a European Magnet Office (EMA) with corresponding competences. In particular, the existing fears of taking too high an investment risk in the financing of an elevated maglev system based on 2 tracks have so far prevented a consistent system implementation.

The resulting task of making the 2-route magnetic levitation system more efficient and cost-effective was dedicated to a circle of inventors on a private basis, detached from all opinions, barriers and taboos, while fully maintaining and exploiting all the advantages of the Thyssen-Krupp system level achieved so far. On the solution side, the following the following efficiency-, flexibility- and economy-increasing optimization improvements in patent-approved form by means of Track design on only 1 track in double-deck elevated track design.



⇒ Vehicle deployment flexibility through integration of vehicle transfer stations in the stops. At the end points of the routes, the vehicles can be diverted from the upper track in an elevated loop to the lower one and from the lower to the upper track on the other hand by changing direction in the roundabout procedure. In the respective stops, these are moved from the upper to the lower lane and vice versa on the operational side by means of retained lifting-lowering units, using wheel chassis that can be used. By means of this, the vehicles can be self-propelled from and into the hoists as well as the fastened

Drive routes out/in. This leads to both efficiency-enhancing and fleet-minimizing effects. On the implementation side, the respective track encroachment devices of the vehicles maintained on the roof or floor side are detached and closed again in the opposite ratio depending on their implementation. In the same way, the fold-in and fold-out magnetic motors mounted at the top and bottom of the vehicles take over their implementation tasks. For cost savings, a replugging process of the magnetic motors could also be used when changing direction. The possibility of moving vehicles from one road to another, which expands the system, thus results in both advantages in terms of demand, e.g., flexibility on the application side, as well as fleet-effective maintenance and investment reductions.

⇒ 1-lane elevated, double-decker track design. Due to its variable vehicle use compared to the 2-trassy track design, this leads to considerable cost reductions

⇒ use of the Peiner beam as a tried-and-tested, rationally manufactured and can be used in the candy way method.

⇒ halving of capital expenditure. Since only 1 route must be built instead of 2 routes, there are savings of about 50% on the track side.

⇒ further reduction in land consumption as a result of only 1 route; thus 40 % reduction in land costs

⇒ further reduction of the annual cost of capital interest and depreciation rates due to the reduced investment requirements for only 1 route.

⇒ further reduction in operating costs due to only 1 route in the areas of control, personnel and storage as well as repair and maintenance.

⇒ further minimization of the fleet stock due to a flexible deployment of the vehicles as required on both lanes. This leads to cost reductions in the Acquisition, scheduling and maintenance area of the vehicles. Overall, considering the additional investments for Vehicle conversions in stops due to the 1-trassy track design in double-decker road design an investment savings potential of a good 40 % compared to the costs of the 2-lane track design. Furthermore, there are reductions in operating costs of at least 8 %.

System expansion to the transport of heavy as well as large-volume goods by

⇒ Introduction of containerized, system transport vehicles as load drones.
In addition to the sections in the passenger vehicles set up for transporting baggage and small containers, a magnetic container transport vehicle, also driven by magnetic technology and hovering automatically and without a driver, is used as a so-called load drone for transporting large-volume or heavyweight goods. These load drones, which are fully integrated into the control and operating system, are available in variable sizes for transporting goods. Their preferably noiseless operation at night at speeds of 200 km/h leads to considerable relief of the road-truck traffic and a considerable acceleration of the freight transport. The considerably higher average speeds than is possible on the road at a maximum of 80 km/h thus result in advantageous reductions in transport times. Like passenger vehicles, load drones can be moved on the roadside and, like these magnetically driven, hover over the double-decker lanes with different directions of travel, either standing or suspended. They can easily pick up and transport consolidated, bulk and general cargo as well as, among others, Euro pallets, sea containers, passenger cars and military equipment for long-distance transport. As a result of the same monitoring, safety and automation technology used in the operation of passenger vehicles drones can thus travel to their destinations from point to point, either individually or in combination as a train. The use of load drones on the demand and control side at the stops and as an additional monitoring and intervention function is also subject to the service centers. The use of load drones results in the following advantages for long-distance freight transport:

⇒ relief of the road from heavy truck traffic with positive effects on ecology, fuel consumption and maintenance of the road network.

⇒ shortening transport times compared to both road and rail by more than 65%.

⇒ ensure an economically profitable utilization of the system by integrating the transport of goods and goods. This leads to a sustainable strengthening of revenues, e.g., the profitability of the system.

⇒ minimization of the fleet of load drones due to use on both routes as required in day and night traffic.

⇒ driver's failure due to automated driving in redundant operational protection.

⇒ avoidance of load drone investments by Kon theload drones of forwarding companies. This saves them a good 50% of the investment costs of a truck while maintaining their entrepreneurial independence as a cargo drone owner and charterer, including their advertising use. Maintenance and repair costs are far below the maintenance costs for a truck due to the wear-free hovering. On the system side, therefore, there are no operating costs from load drones to be maintained or financed.

Result

The presented optimized 1-line maglev train system in double-decker road design

⇒ represents a qualitatively further developed, more flexible and mobility-enhancing means of transport for both fast passenger and fast freight transport in long-distance transport on 1 route in the increased safety standard. All vehicles, components and routes are redundantly networked and subject exclusively to a uniformly identical operating and control system.

⇒ further minimizes the previous safety- as well as eco- and technological problems and limitations of the wheel-rail system for a future-oriented high-speed transport system. For example, on-board batteries and cables are enclosed with fire protection and the track is open in the middle, so that snow and foliage can trickle through as far as ever. In addition, if necessary, it can be heated on the winter side to dissolve any icing ingress. In addition, all vehicles at the front and rear are equipped with upstream impact bumpers with clearing grilles. Due to the use of load drones in front, passenger vehicles are protected from route hazards in an emergency braking. There is no blind driving, as the road is also monitored at night by video infrared cameras on the control center side.

⇒ As an efficient, flexible and economical high-speed transport system for freight and passenger transport, it meets the global operational requirements of large-scale countries such as America.B Arabia and Australia or China, India, Canada and Russia.

⇒ does not displace but complements and relieves compatible existing mode of transport systems in a demand-oriented manner.

⇒ allows disturbances to be countered flexibly. For example, the takeover of passengers as well as the use of repair vehicles in a controlled, control center-monitored form can take place via holding bays or the unaffected roadway.

⇒ makes a sustainable contribution to mobility, economic and employment growth in each country, ensuring a uniform rapid interconnection system across countries.

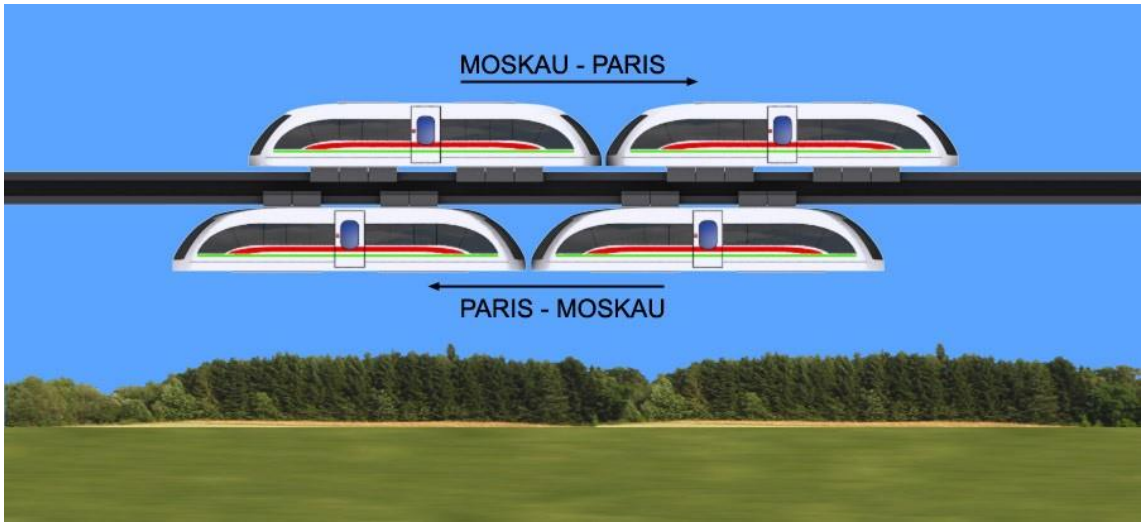
⇒ makes a positive contribution to resource and climate protection due to the system.

⇒ is technically mature and economicallyviable. Overall, the technological and economic advantages shown above all lead to a considerable reduction compared to the Thyssen-Krupp 2-way track system.

⇒ of the investment costs at 40 % and

⇒ operating costs by 45%

This results in a forward-looking, extremely economic and competitive reduction of the previous transport costs of road and rail to a level that is reflected in both the freight and personnel transport sectors with an average value of 50 % of the currently applicable prices on an advantageous basis in favor of magnetic levitation technology. Thus, the system contributes to a sustainable "return on investment „without considering economic unit cost degression and further rationalization and time-saving effects. It is incumbent on politicians to fulfil their duties of care for the use of safe, fast and cost-effective transport systems for citizens, industry and utilities.
Accordingly, it has to appreciate the magnetic levitation technology, i.. to support it on the operational side.



COMPUTER MOVIE ANIMATION

The computer-animated short presentation/computer animation (www.iat-maglev.com) of the optimized 2-path maglev system in double-decker road design to the 1-path system should help to gain a simplified understanding of the further developed 1-path system. In addition to this computer animation, the attached patent specifications in German and English
- together with English translation of the exposé - referred to.