Metrocargo

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Metrocargo is an innovative system integrating road and rail transport in a new and efficient way. The idea is to use for cargo the same concept used for passengers: to set up a network of shuttle trains running on a fixed time plan, loading the cargo units (10', 20', 40' and 45' containers and swap bodies) progressively on different trains until they reach the terminal closest to their destinations, and using trucks for the final door transport. This is made possible by an innovative device that allows loading cargo units on train cars horizontally, and can therefore be used whilst trains are standing in station under the electric feeding line.

Targets

- to move high volume of freight traffic from road to rail, using the existing railroad network and an innovative way of loading containers on rail cars horizontally, under the electric feeding line
- to form an integrated system using ships and trains for long range transport, and trucks for door delivery and pick up
- to reduce pollution owing to reduced transport by truck on medium and long distance
- to reduce the overall logistic costs owing to greater efficiency.

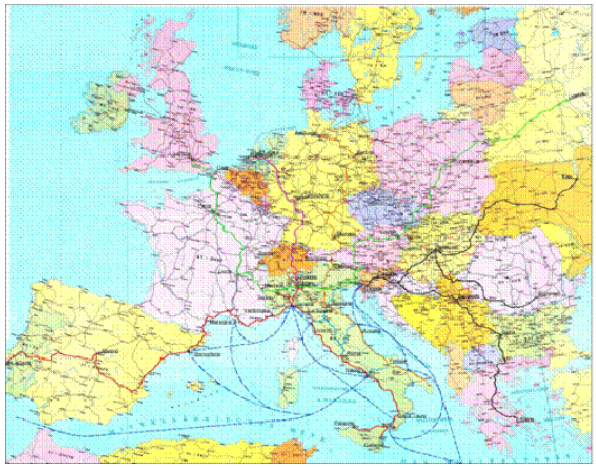
Highlights

- interoperability with other intermodal systems
- fast transport of cargo
- cost reduction over existing system
- flexibility and progressive development through modular construction
- low investments
- limited spaces required
- reduced environmental impact and added safety of road traffic

Transport by road to the nearest terminal where the unitezed cargo (containers or swap bodies) are placed on a motorized rolls platform according their destination.

Cargo units are loaded on the proper train by the automatic system, and subsequently are transferred in other interchange terminals until they reach the one closest to their final destination.

From the last terminal cargo units are trucked to their final destination.



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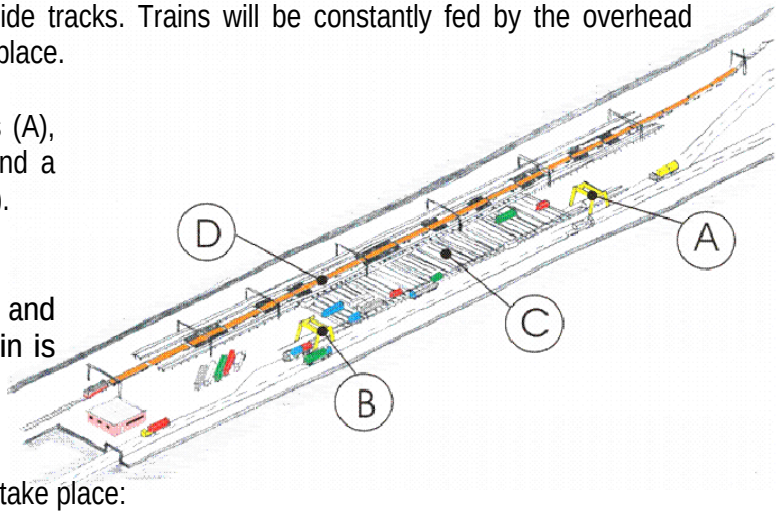
Terminals

Terminals are built parallel to the railway, with side tracks. Trains will be constantly fed by the overhead electric line and no uncoupling of wagons will take place.

Terminals include entrance area of the load units (A), delivery area (B), automatic roller platform (C) and a loading and unloading device from and to trains (D).



Metrocargo loads and unloads the containers and swap bodies from the train cars whilst the train is standing under the overhead electric line.

When a train reaches the terminals two operations take place:

- unloading the transported units that need to be discharges at that terminal, either to be reloaded on a another train or trucked to their final destination
- loading the units directed to other terminals

Cargo is handled by a horizontal transfer platforms made up of separate sections that move simultaneously the different load units. Cargo units are loaded and unloaded from trucks by means of gantry or mobile cranes.

Metrocargo cuts down the number of trucks running on highways, reducing accidents and pollution, contributing to a better life quality for everyone.

The VIT project – Vision for Metrocargo

VIT *(Vision for Innovative Transport)* is a EU funded project with the aim of designing vision functionalities for Metrocargo which:

(i) assure precise handling;
(ii) verify the train composition;
(iii) plant safety and security.

The two main themes of VIT are to provide automation and safety to Metrocargo plant.

Computer vision is the keystone for both themes: it provides non invasive 3D reconstruction techniques at the basis of automatic control functionalities and ad hoc video-surveillance methods at the basis of human safety.

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