

# Marathon2Operation General Introduction



**MAke RAil The HOpe for  
protecting Nature 2 future  
OPERATION**



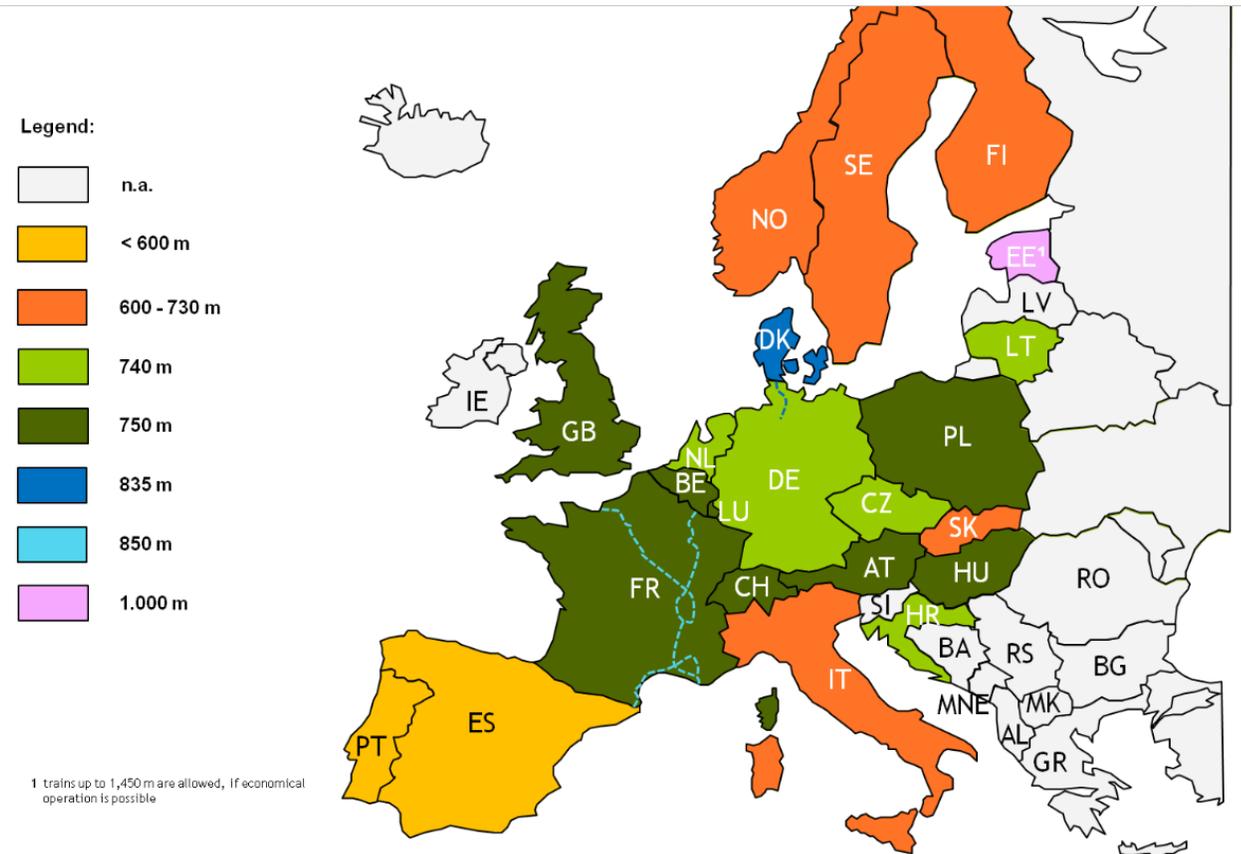
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# Why Marathon Trains ?

## Road transport Trend

The [‘Weights and dimensions’](#) Directive of **1996** sets maximum vehicle dimensions and weights for national and international road transport in the EU: **16.5 metres (m) in length (18.75 m for road trains), 2.6 m in width, 4 m in height and 40 tonnes (t) in weight (44 t for combined transport**, e.g. by rail and water). However, Member States are able to decide on derogations from these rules for vehicles used only in national transport. Longer and heavier vehicles (LHVs) also known as mega trucks, **gigaliners, eurocombis, and ecoliners**, typically measure **25.25 m in length and up to 60 t in weight**. They are currently allowed in **Finland and Sweden**, and are being tested in **Denmark, the Netherlands and some German Länder**.



Longer Trains urgently necessary if Rail wants to keep up road efficiency



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# Market segments

# What Marathon must offer

Bulk: Largely mature market ore, coal, oil, sand, gravels, cereals using block trains on long, medium or short distances. These trains maybe very heavy according to the cargo carried in specialized wagons, sometimes light on the empty return trip.

Cost reduction

Growing segment with High potential  
Containers, swap bodies on short, medium or long distances either in block train as from ports to dry ports or between factories or in combined transport trains from ports to Hubs or intermodal terminals or between intermodal terminals. Weight is very variable according to the cargo transported from steel coils to light stuff.

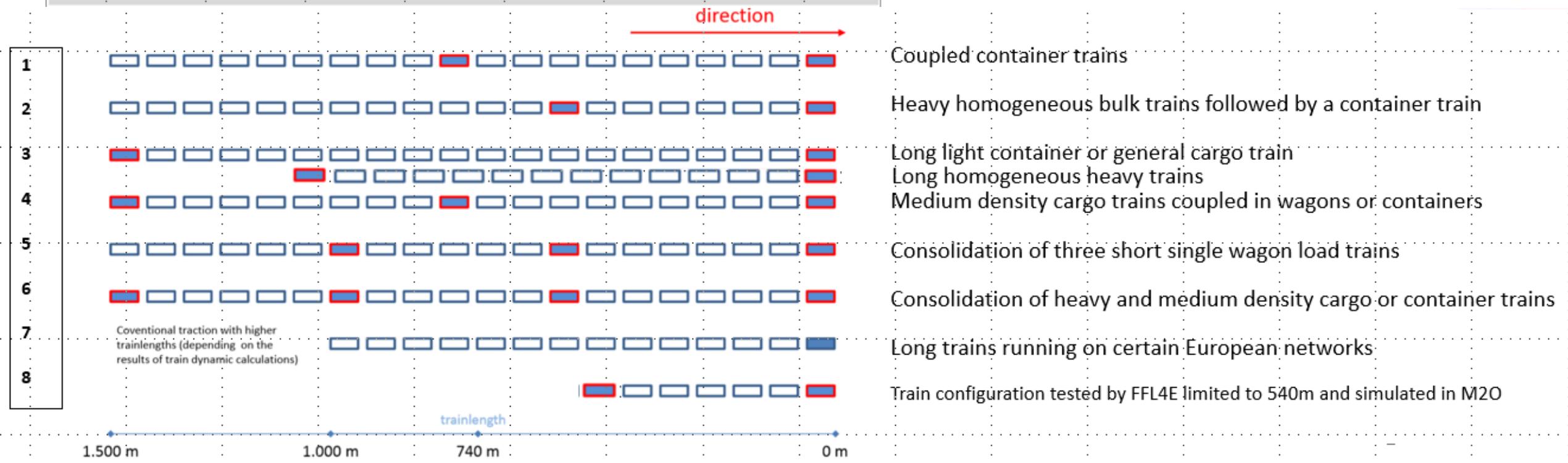
Frequency, adaptable capacity  
Reliability  
Cost reduction

General cargo: There is a high potential but challenging to capture as the trend is to smaller shipments, more frequent, from several warehouses. This is the field of wagon load transport largely abandoned by rail operators because of production cost and of reliability essential to come back into complex supply chains. Quick consolidation of shorter trains on Hubs to distribution to different destinations from long distance Hubs should be tried. The unit weight may be very variable.

Cost reduction  
Reliability  
Long distance between consolidation and distribution Hubs with interface efficiency  
Industry clustering favourable

# Type of consists Studied and possible applications

System configuration 2: target system



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# Main Features of M20 which will be developed and presented

- Standard characteristics of European Traction Units involving the type of TUs to be used in FR8RAIL II for the test campaign
- European wagons, type and loading distribution from a large data base of German trains, representing European freight traffics are used to generate virtual trains, according to UIC 421.
- The radio communication system is using GSM-R as a basis and LTE where necessary, 5G and a specific synchronous braking to show the improvements in certain cases.
- Various categories of infrastructures introduced in the safety studies to detect safe configurations
- Safety studies and assessment, implementation plan with use cases and a suggested roadmap.

End of introduction  
Radio communication part to follow



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