

## Fraunhofer Institute for material flow and logistics IML

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## EFFICIENT LOAD SMARTER ROUTING AT LOADING RAMP



# OPTIMAL COMBINATION OF ROUTES AND LOADING SPACES

By broad distribution of transport management systems significant saving potentials have been gained in freight transport. According to current studies logistical costs are up to 10 % in the industry and up to 25 % in trade as measured by the total costs. The Fraunhofer IML with its project Efficient Load takes active part in the next generation of new innovative concepts in transport organisation. Efficient Load addresses the planning short and long-distance traffic routes and achieves a proven reduction of up to 20 % of the transportation kilometres by coupling route planning and loading space planning. The significant increase in vehicle capacity utilisation with less empty space paves the way to the reduction of your logistical expenses and environmental issues as well.

## Efficient Load at a glance

Efficient Load originates from a project of the German Federal Ministry of Economics. It combines requirements, data interfaces and procedures for efficient coupling of two logistical problems, the route planning and the loading space planning, which are in practice mostly handled separately. The requirements include specific restrictions regarding route and loading space as for example loading and unloading time frames, upper load limits, delivery profiles and batch restrictions.

The planning procedure designed and implemented by the traffic logistics of the Fraunhofer IML considers all requirements in one single procedure which, in contrast to many other methodical approaches, enables simultaneous optimisation of routes and loading spaces.

## Efficient Load at 3PL and 4PL

With the current structural change in carrying-trade consignors increasingly delegate competences to 3PL and 4PL logistic service providers and concentrate on their core business. This development opens up more possibilities for the service provider to optimise transports within his own network.

Beside transport processing, the material planning of the service provider is more and more in charge of transport composition. More than ever the loading space comes into the forwarder's focus. Efficient Load supports this trend with the combined planning of transport and loading. Beside any current facet of route planning Efficient Load supports all relevant aspects for an optimal design of the packing plans and loading orders.

## Efficient Load in the industry

Procurement and distribution is more and more sourced out in modern industrial and commercial enterprises and is delegated to service providers. Apart from the positive aspects, transparency regarding logistical transport and storage processes decreases this way. The consignment which is to be loaded is classified according to tariff classes and transported by the forwarder.

The loading companies are therefore interested in tuning their consignment to the tariff classes of the service provider in an optimal way. Efficient Load offers this possibility. In addition to modelling transport processes of the forwarder, loading spaces can be efficiently utilised so that favourable tariff classes can be realised for example in the full load segment. Here a direct savings potential arises which can already be implemented at short notice.

Efficient Load could already show significant savings for transports of the Bayer AG.

“Efficient Load significantly contributes to operating transport devices at optimal capacity and to avoidance of empty drives. First test runs have shown that the system makes route planning more efficient by less scheduled vehicles [...]”

Ralf Weske, expert for transport solutions, Bayer Business Services

## Efficient Load in IT

Efficient Load is not an independent TMS, but it serves as extension of existing planning infrastructure. This way protracted adaptation works are avoided. By full specification of data interfaces between corresponding procedures various options are opened up for the IT service provider in order to improve your software with Efficient Load.

Regarding the design we have put significant emphasis on easy expandability of existing software environments. Efficient Load specifies route planning aspects as well as loading space aspects. It can be accessed by existing route planning processes or it can be added as a planning block.

With little effort and on an existing software platform the next generation of transport logistics can be realised and further cost-saving potentials can be derived.

## Further information

For more information about how our team of the traffic logistics can support you, please visit us on the internet: [www.iml.fraunhofer.de/Verkehrslogistik](http://www.iml.fraunhofer.de/Verkehrslogistik). We also appreciate your call or email contact in order to give individual advice.

## References

M-real Corporation

Gefco

Bayer Business Services

