FEHRL

Intelligent Route Guidance for Heavy Goods Vehicles

Sustainable Surface Transport 1.6.2

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HEAVY ROUTE

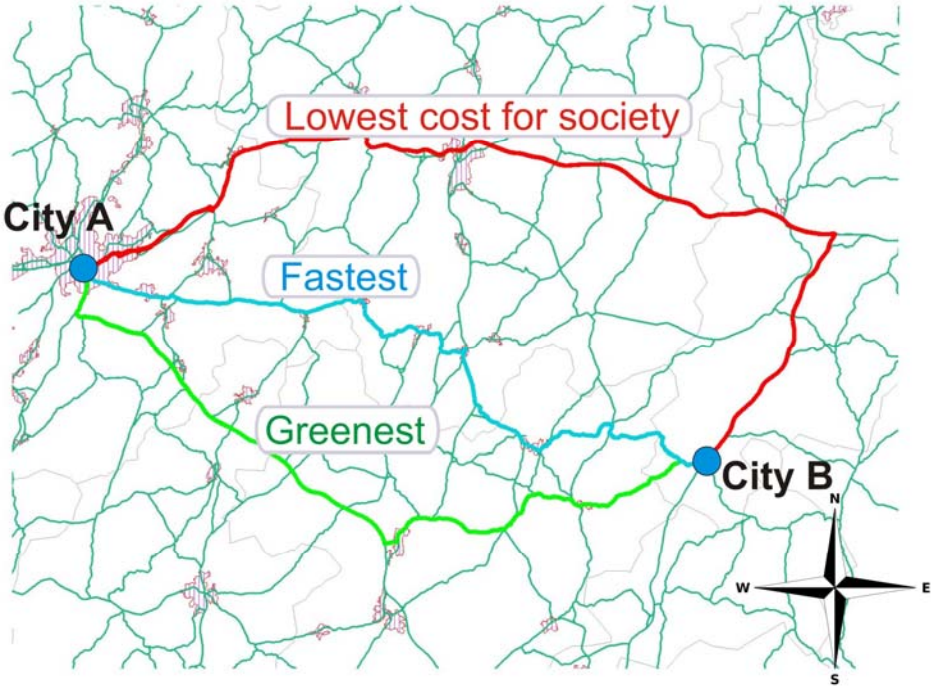
vti

Vehicle/Infrastructure interaction models

HeavyRoute aims at deriving the safest and the most cost effective routes for road freight transports throughout Europe

Basic concept of routing; finding the shortest (or fastest) route

In **HeavyRoute** not only the shortest route is searched but also the ”greenest”, safest and with least damage on road and bridges.



Recommended routes

Steps to derive recommended routes

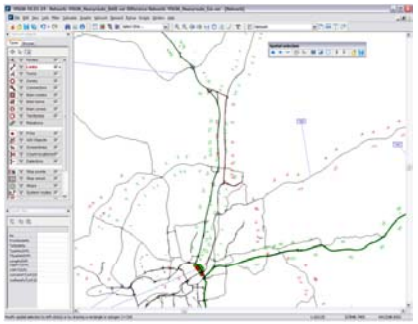
Kees Wevers, NAVTEQ | **Leif Sjögren, VTI** | Gunnar Lindberg, VTI

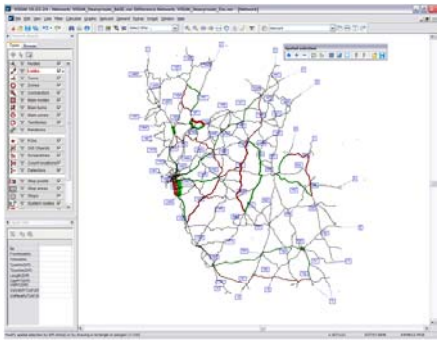
Road data
HGV data
Traffic data

Models

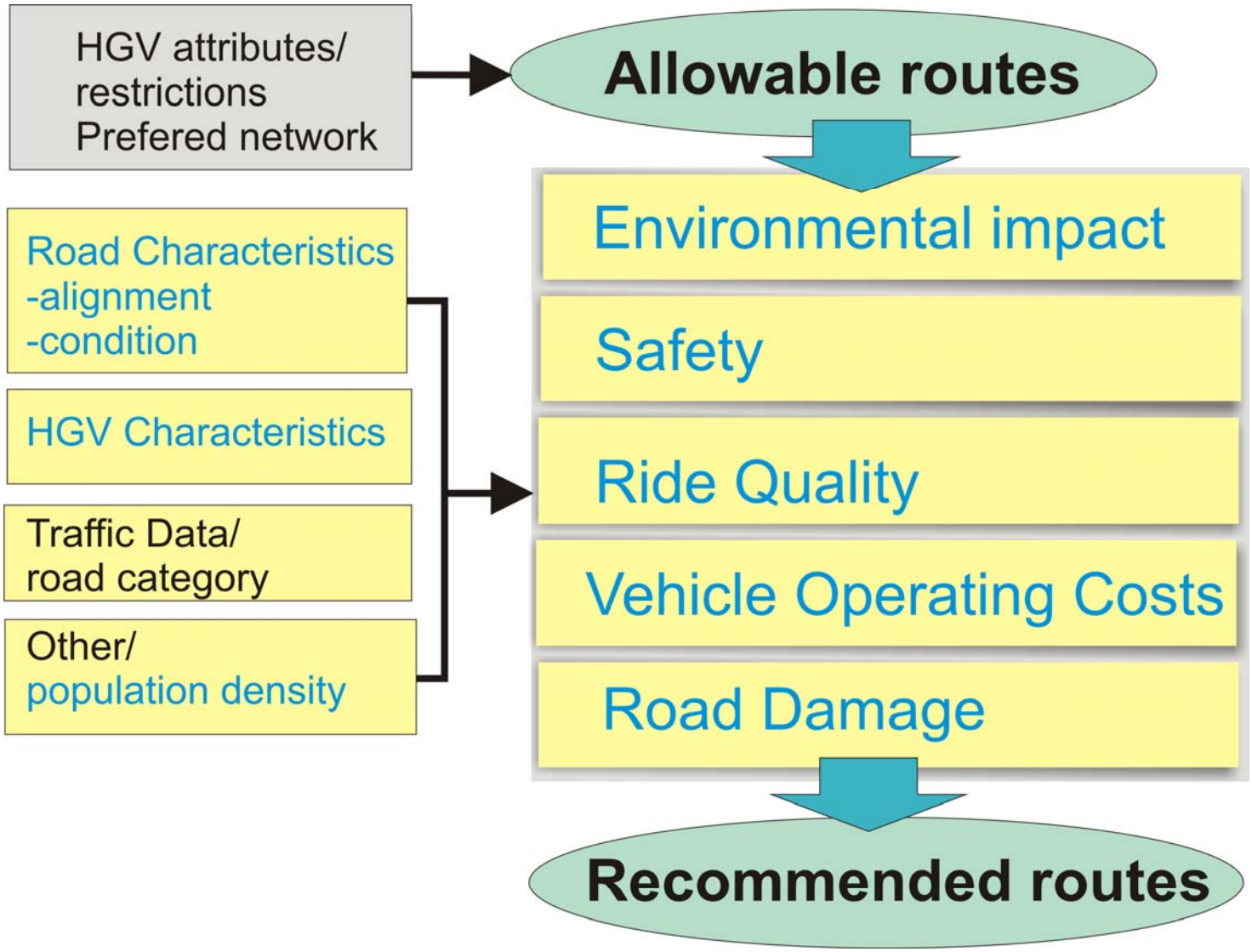
Effects

Evaluation,
cost functions





Vehicle/Infrastructure interaction models



Vehicle/Infrastructure interaction models

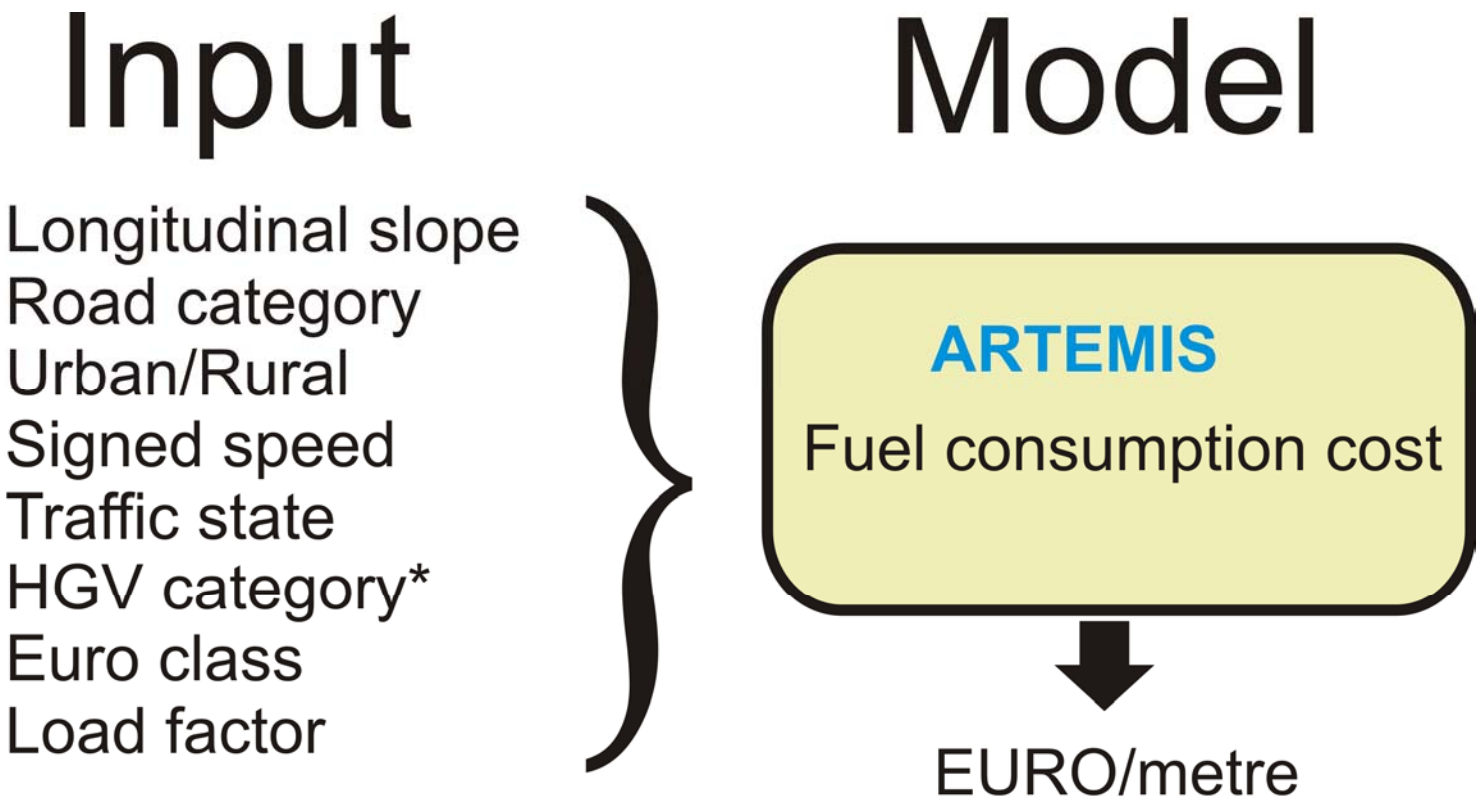
No new models have been developed in HeavyRoute, but some of the selected models have been adapted

Trans-European models has been prioritized

Fusion of database information

Road data	Road category (static data) Alignment (static data) Condition (periodic data)
HGV characteristics	e.g. Height, width, load factor, number of axles
Traffic data	Traffic flow
Other data	Population density

Environmental effects/ fuel



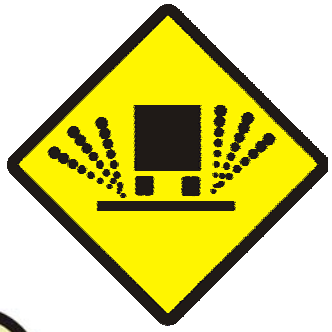
* including max allowed speed

Environmental effects/ Air pollution

Input

Longitudinal slope
Road category
Urban/Rural
Signed speed
Traffic state
HGV category*
Euro class
Load factor

Model



ARTEMIS

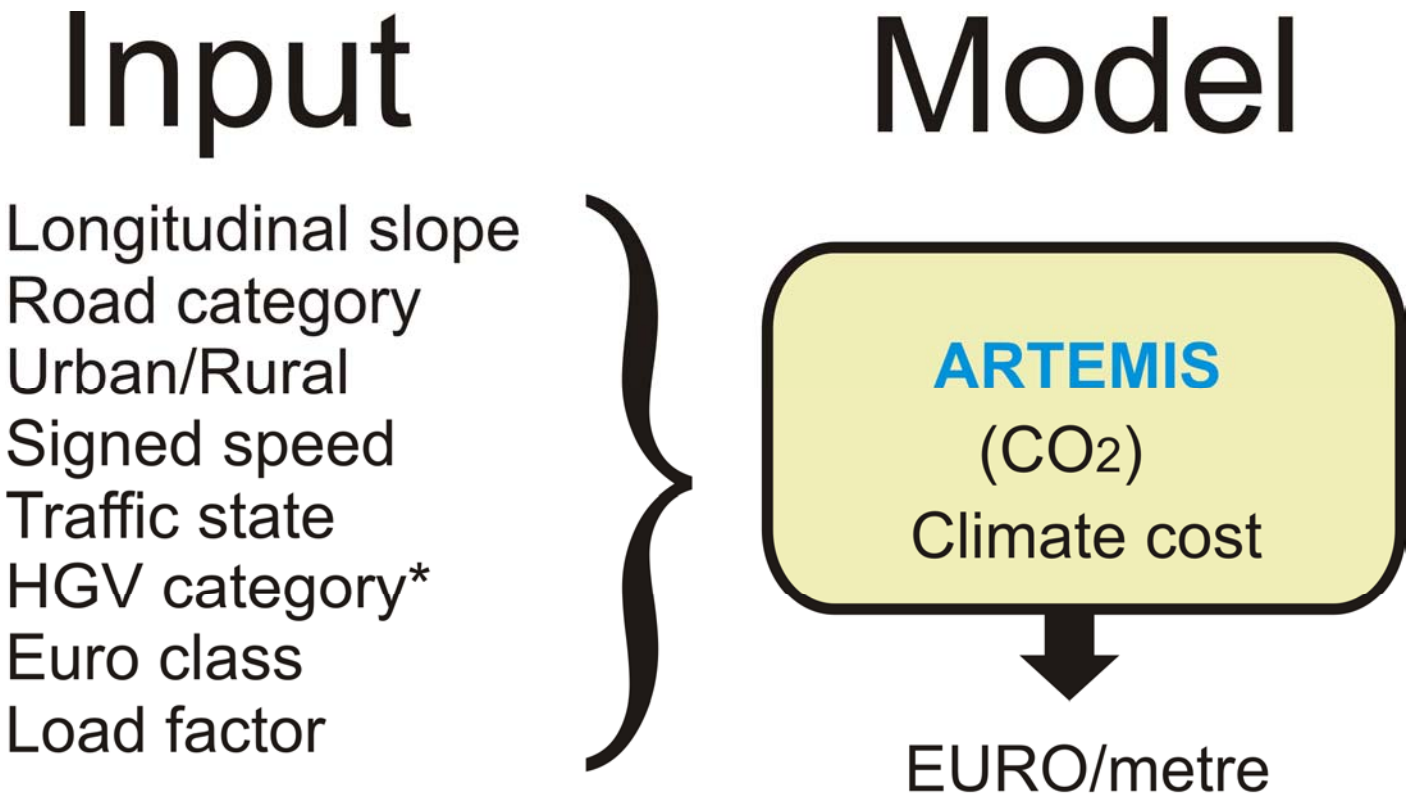
(NO x and PM)

Air pollution cost

EURO/metre

* including max allowed speed

Environmental effects/ Climate



* including max allowed speed

Environmental effects/ external noise

Input

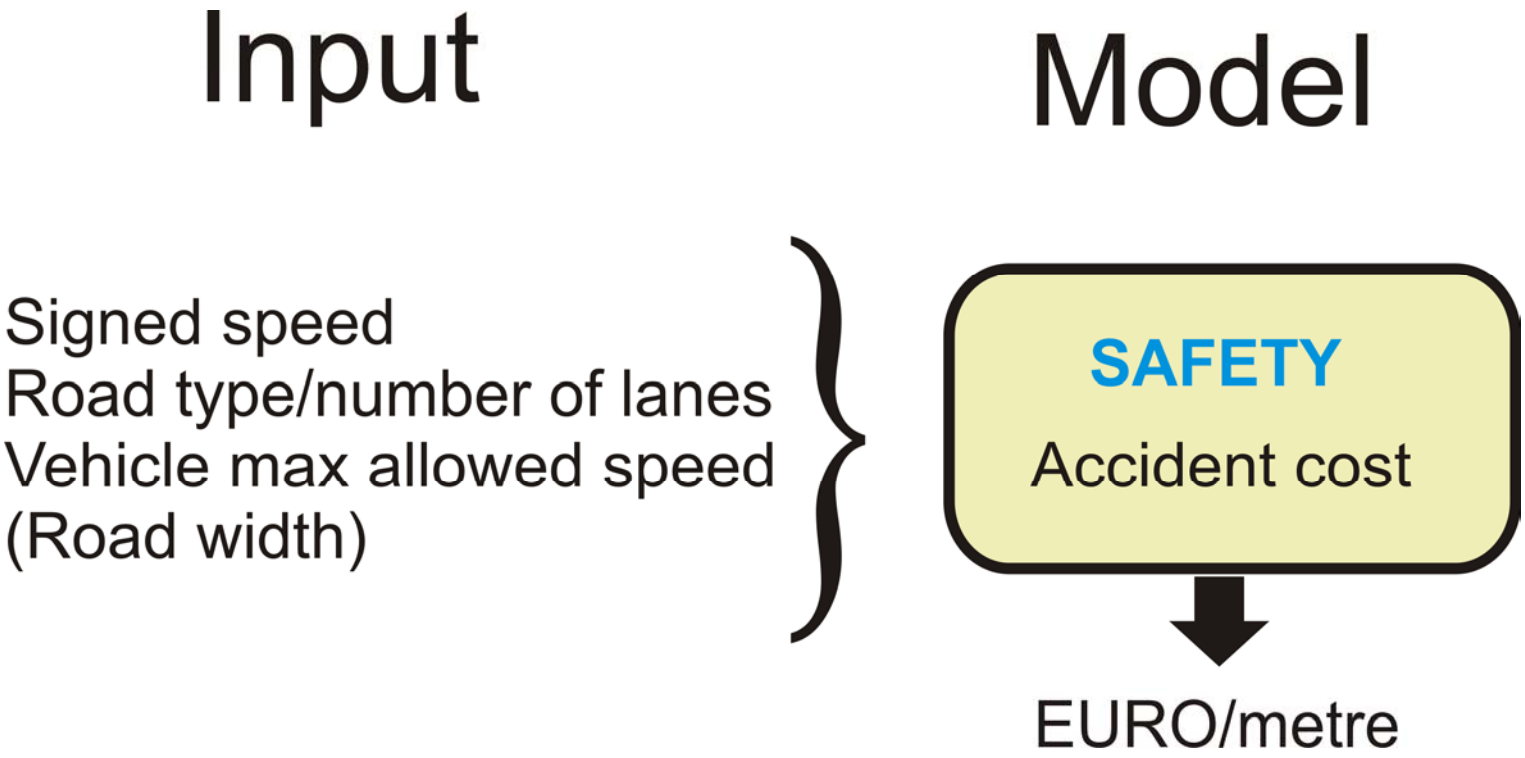
Number of axles
Speed
Population density
Noise reduction

Model

HARMONOISE
External noise

EURO/metre

Safety


Input
Model
Signed speed
Road type/number of lanes
Vehicle max allowed speed
(Road width)
SAFETY
Accident cost
EURO/metre

Ride quality

Input

Model

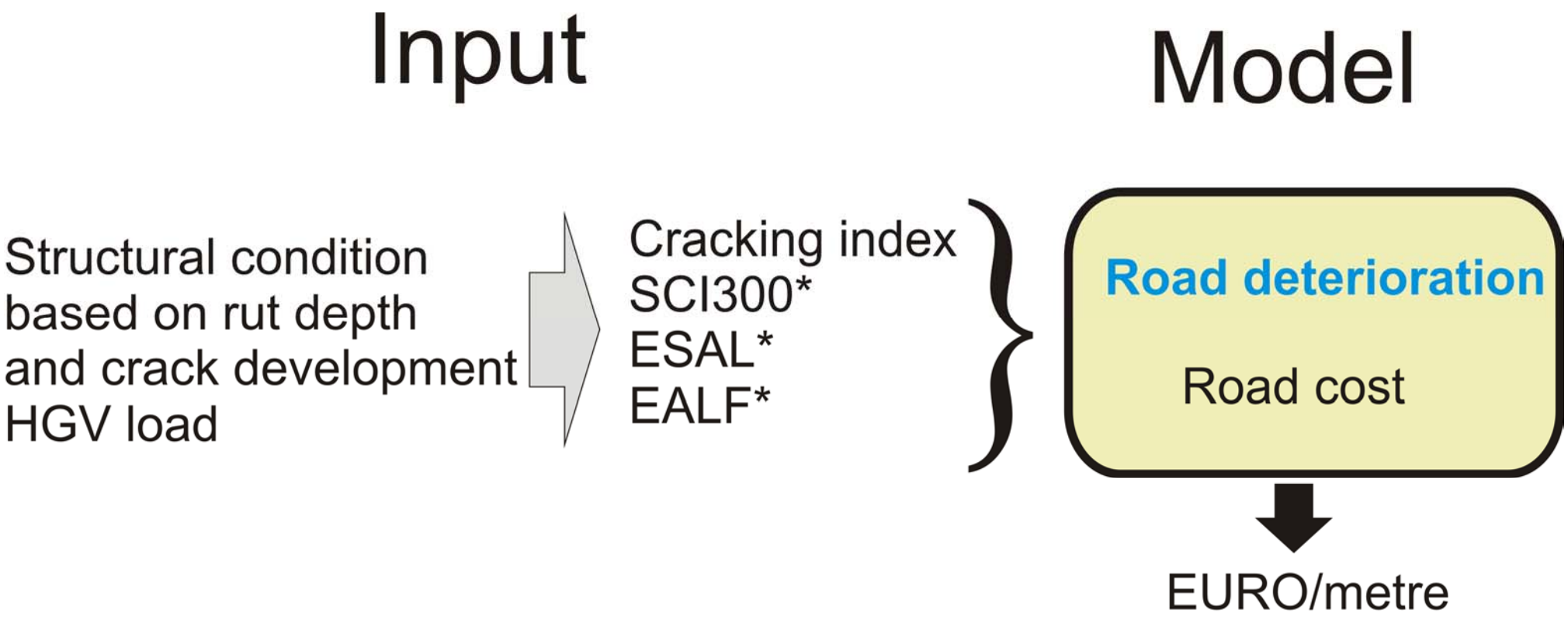
Left and right longitudinal profile

HATI

Ride quality

Heavy Articulated Truck Index mm/m

Road damage



*SCI300=Surface curvature Index 300 mm
ESAL=Equivalent Standard Axle Load
EALF=Equivalent Axle Load Factor