

Approach for Realisation of Cross Competence Strategies

Traffic Centre Hessen (Germany)
Katrin Friebner



Contents of the dissertation are:

- Strategy definition
- What has been done until now: The Intermodal Strategy Manager (ISM)
- Initial situation of network interference, organisational and technical aspects
- Elements of network management: targets, strategies, coordination core, traffic infrastructure
- Development of a softwaretool which will integrate the coordination of strategy selection and agreement
- Further steps

Strategy definition

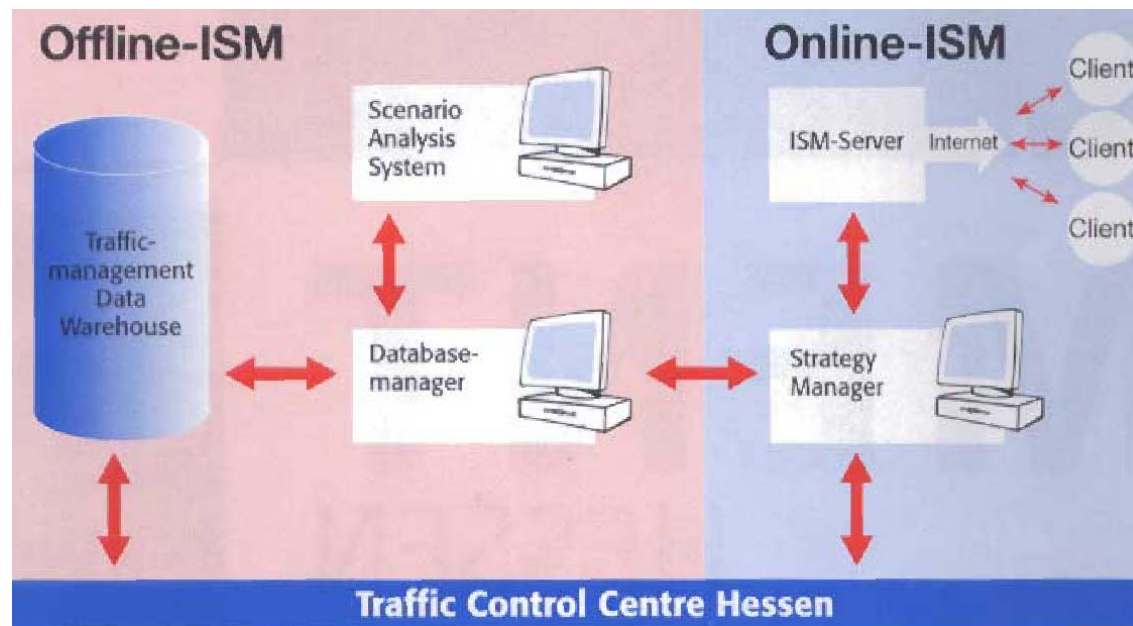
- strategy:
 - concept of action consisting of various situationrelated measures
- the problem situations whose effects cannot be mastered by only one single traffic management partner are of special interest
- the corresponding intermodal strategies consist of measures from various partners, which need to be coordinated
- the control for the sectors lies with different authorities, but the traffic doesn't stop at their jurisdictional borders

What has been done until now

- further potentials like cooperations with other institutions
- improving and extending technical infrastructure for the network control
- prototype for the cross competence intermodal definition
- Intermodal Strategy Manager:
 - management of cross competence intermodal strategies
 - communication between the participants in the traffic management

What has been done until now: The Intermodal Strategy Manager (ISM)

- prototype for the cross competence intermodal definition and activation of traffic management strategies
- predefined strategies were coordinated between the involved participants



The Intermodal Strategy Manager (ISM) – The Strategy Manager

- monitors and evaluates the current traffic situation,
- selects a suitable strategy and verifies the compatibility of the chosen strategy,
- controls the strategie coordination,
- stops the activation procedure,
- initialises the strategy activation,
- controls the deactivation conditions,
- verifies and responds to the partners´strategy requests.

The Intermodal Strategy Manager (ISM)

Offline-ISM: strategy definition



Online-ISM: strategy application

The Intermodal Strategy Manager (ISM) – The ISM-Server

- negotiates the strategy activation,
- is connected with the internet and offers an information interface,
- administrates the status of all strategies and provides information to the partners,
- operates an automated malfunction management.

The Intermodal Strategy Manager (ISM) – Solution Approach

advantages of the ISM:

- unnecessary to build up an overall traffic control centre and to hand over responsibility from the partners
- system independent
- internet based communication technically easy to implement
- small amount of data exchanged

Initial situation of network interference

Organisational aspects

- motorway network consists of various meshes
- different corridors in which the measures of the network interference influence each other

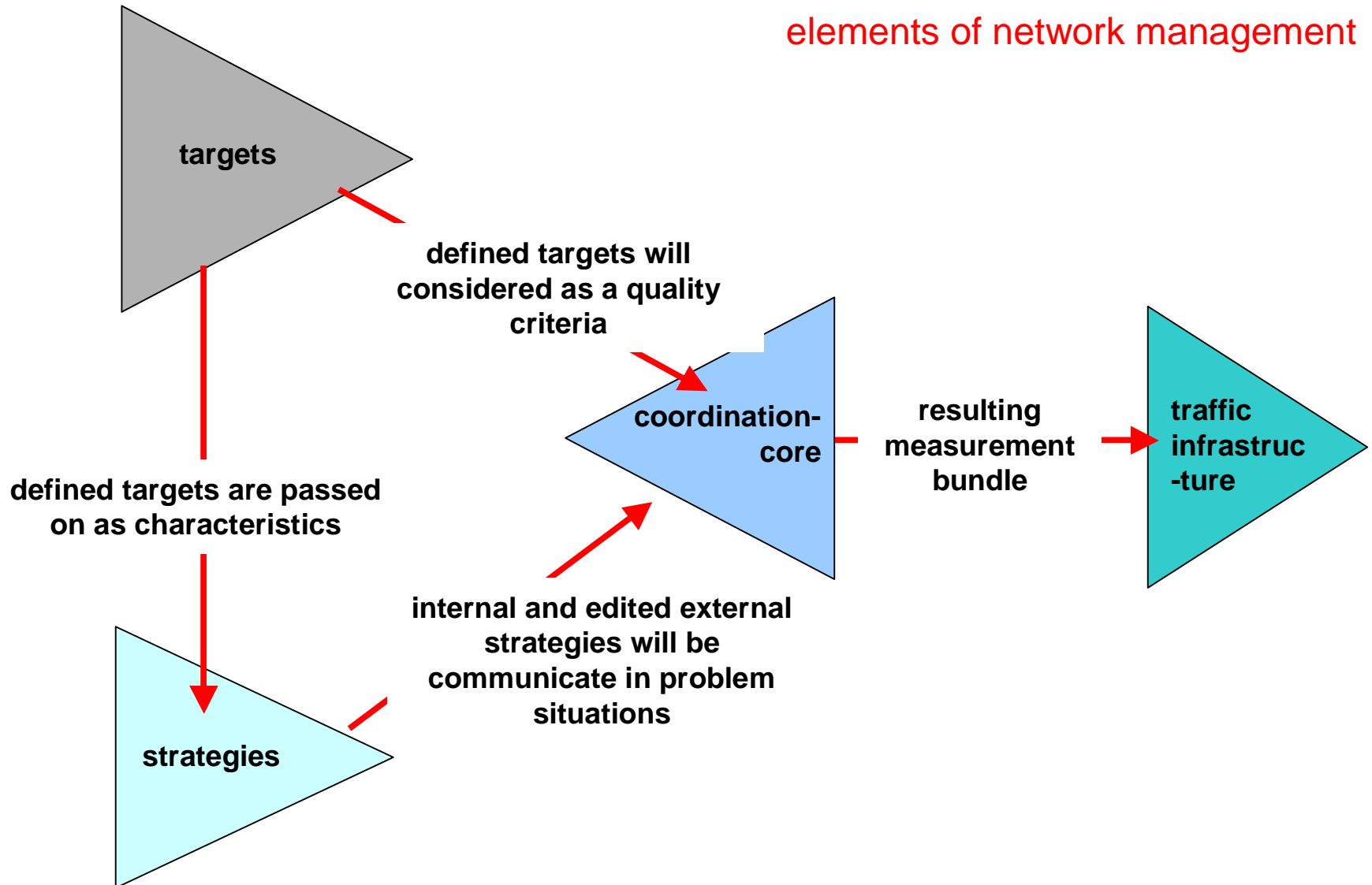
Technical aspects

- development of a core system
- further programmes (POLYDROM) for a preventive network management and strategie demands from external partners

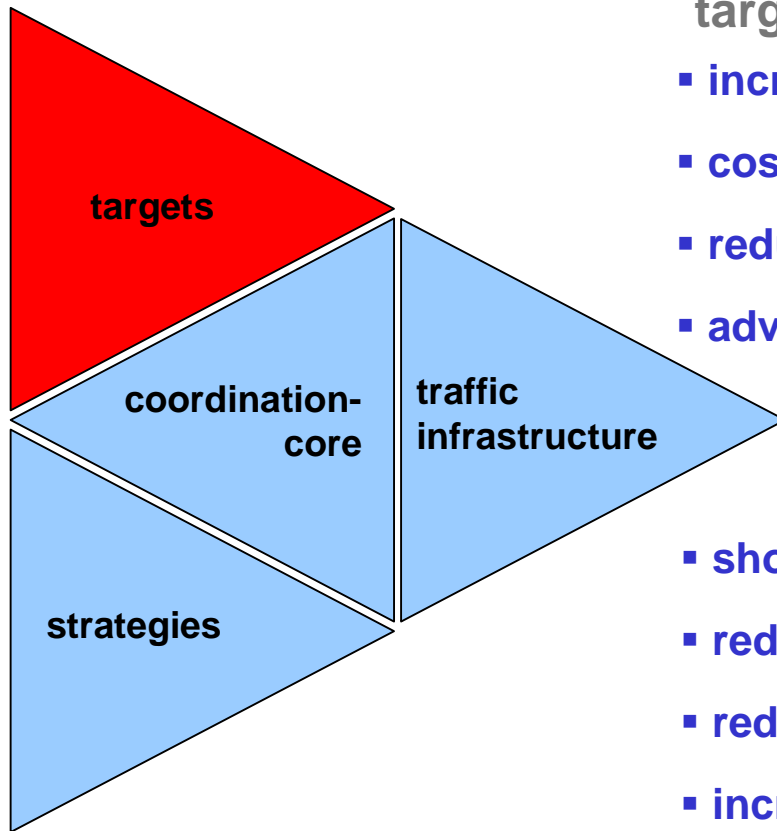
Targets of the network management

- coordination of the strategy demand from the core system, POLYDROM and other external partners

elements of network management



elements of network management - targets



targets

- increasing of the traffic safety
- cost economies
- reduction of the environmental burden
- advancement of the traffic flow

are reached through

- short reaction times on unforeseen events
- reduction of the congestion-times and –situations
- reduction of the travel time
- increase of the acceptance



quality assurance of the network management through check-up of the aims

elements of network management - strategies

measure spectrum of the strategies

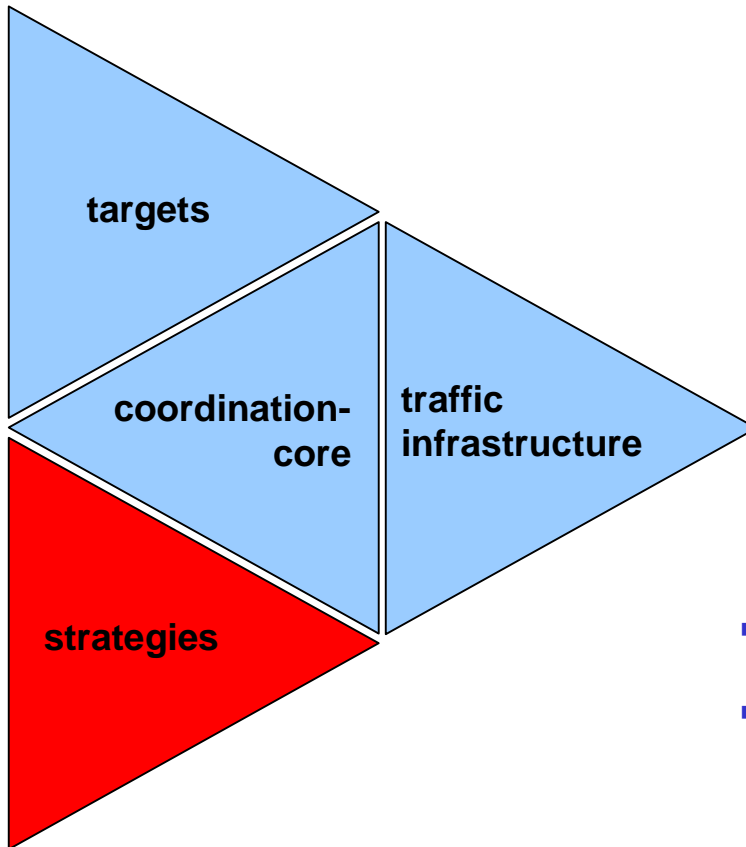
- collective network impact
- information-measures
- flanking control measures for the improvement of the traffic flow
- individual target leading

areas of application of the control strategies

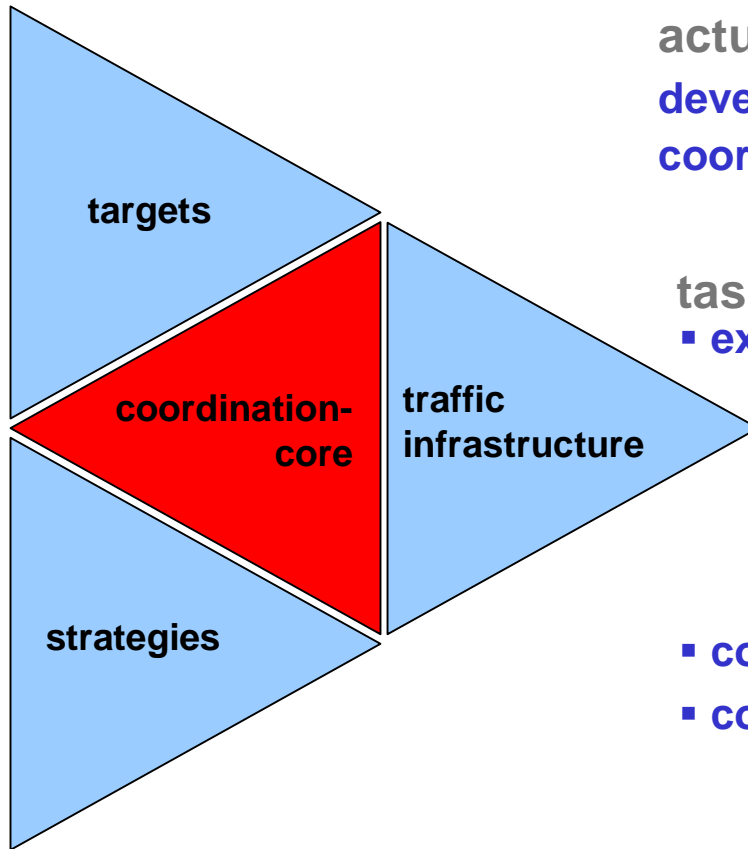
- inside of a competence area
- regional / overregional



predefined strategies are saved and can be accessed in several problemsituations



elements of network management – coordination core



actual situation

development of a softwaretool which will integrate the coordination of strategy selection and agreement

tasks

- existing softwaretools have to be coordinated:
 - tool for the preventive network control,
 - traffic centre core system,
 - strategymanager.
- conflict solution
- core system is validated

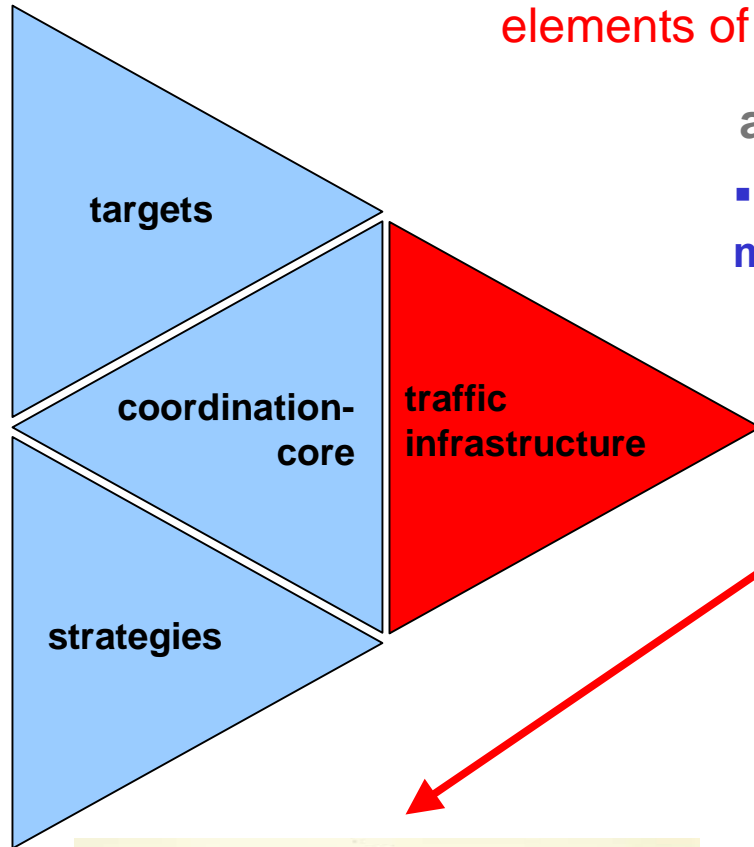


measure batch is transfered to the traffic infrastructure

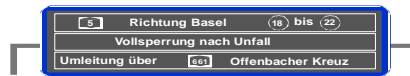
elements of network management – traffic infrastructure

assumption of a network management

- large traffic infrastructure in the relevant meshes
- traffic dates are collected and assigned
- information are transmitted to the road user



substitutive variable direction signs



additive variable direction signs

- broadcast
- internet
- mobile telefon 
- individual target leading
- free programmable information signs

Development of a software tool which will integrate the coordination of strategy selection and agreement

- optimisation of the network control and the strategy management
- development of a software tool which will integrate the coordination of strategy selection and agreement
- system supplementing performs the important coordination process with external partners
- elements are: strategy manager, network manager, strategy planning and evaluation, traffic centre core system

Development of a softwaretool which will integrate the coordination of strategy selection and agreement

the following processes need to be mastered:

- strategy administration and evaluation (offline),
- strategy selection with/without involvement of external partners (online),
- processing of an external strategy request (online).

option to integrate further users, such as local authorities

further steps

- development of the softwaretool to coordinate and optimise the network control and strategy management
- conflict solution within the softwaretool which generates a final control command from the internal and external strategy enquiries
- coordination and implementation of traffic management strategies between the Traffic Centre Hessen and municipal traffic management centres

Therewith the Traffic Centre Hessen is equipped to execute measures within the traffic management on a cross competence level and to thereby achieve an optimum traffic control.

Thank you for your attention!