Train Monitor

Train monitoring IT-system supporting efficient intermodal transport

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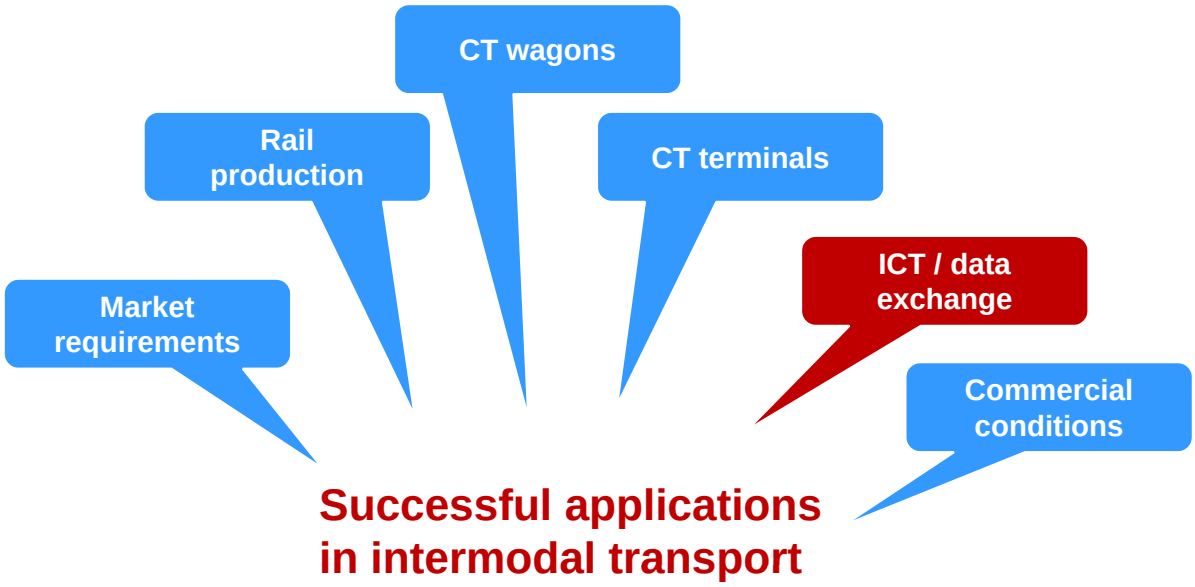
COSMOS Final Conference
Wien, 12/06/2014

COSMOS “Good practices”



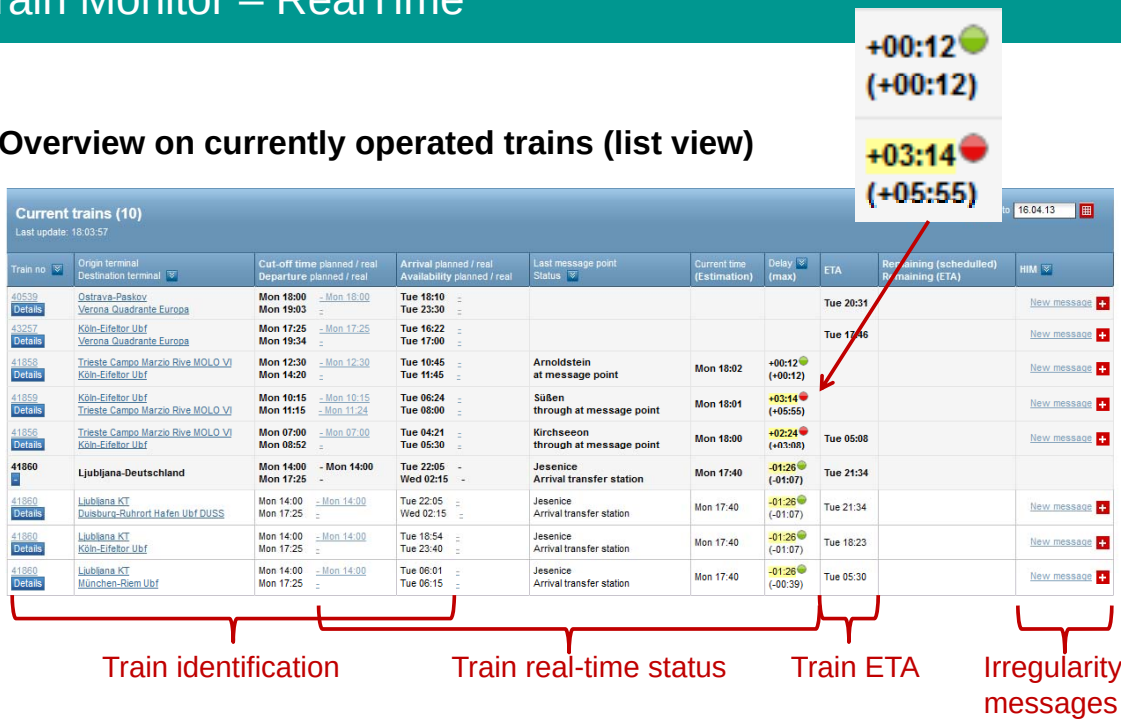
Starting position

CREAM project (FP7, 2007-2011), identified challenges

- Low quality level of intermodal trains in SEE
- Almost no real time status information provided by IMs
- Information exchange between operating partners often based on fax, telephone and email communication
- No IT system in place for the monitoring of domestic AND international trains
- Elaboration of quality statistics very time consuming
- Information of customers required lots of manual interventions

Train Monitor – RealTime

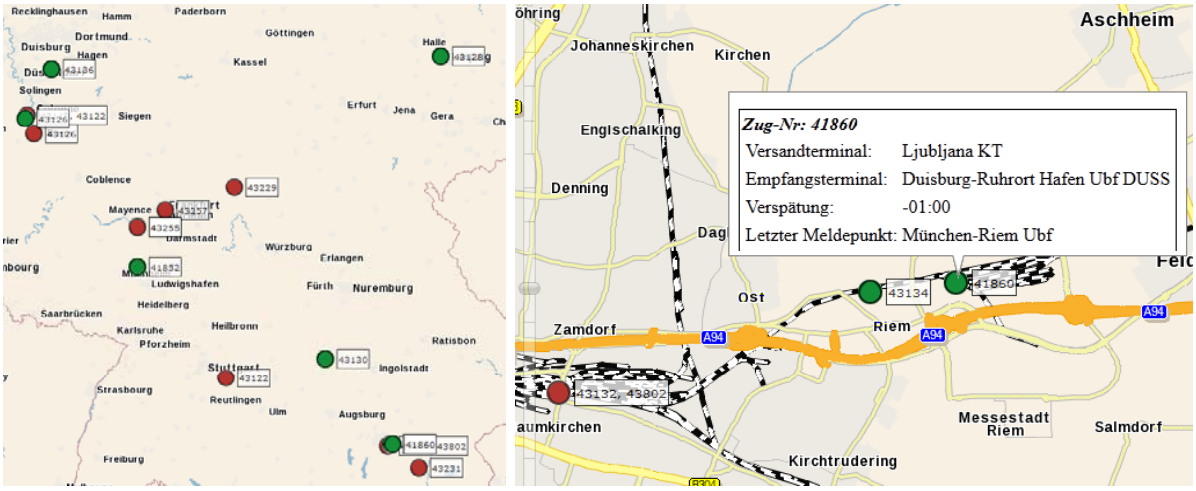
Overview on currently operated trains (list view)



- Status information of your current train operations at a glance;
- Colour classification for delay status (green – yellow – red)
- Individual configuration possible (train filter / column sorting).

Train Monitor – RealTime

Overview on currently operated trains (map view)



- Short info for each train;
- Zoom in/out for your individual map view.

Train Monitor – RealTime

Arrival board

Terminals — Add terminal: Deutschland / Ludwigshafen (Rh) BASF Ubf — Add

DE Ludwigshafen (Rh) BASF Ubf — Close — Full screen — Delete

Status	Train no.	Origin terminal	Arrival [planned]	Train availability [planned]	Status	Last message point	Delay	HM
	41211	Bayonne C.E.F. Intermodal	01:31	02:15	arrived	Saarbrücken Rbf Nord	+08:28	
	41201	Irún	01:31	02:15	arrived	Ludwigshafen (Rhein) BASF Ubf	-00:30	
	50216	München-Riem Ubf	02:36	03:15	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	50215	Duisburg-Ruhrort Hafen Ubf DUSS	02:36	03:15	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	50221	Hamburg-Billwerder Ubf	04:11	04:45	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	50231	Dörpen Ubf	04:34	05:15	arrived	Ludwigshafen (Rhein) BASF Ubf	+04:57	
	50231	Coevorden BE	04:34	05:15	arrived	Ludwigshafen (Rhein) BASF Ubf	+04:57	
	42134	Verona Quadrante Europa	05:29	06:00	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	41255	Port Bou	06:01	07:00	arrived	Ludwigshafen (Rhein) BASF Ubf	+00:37	
	43086	Busto Arsizio (Gallarate)	08:08	09:00	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	50249	Lübeck-Skandinavienkai Ubf	09:28	10:30	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		
	41956	Wels Vbf CCT	10:56	11:30	Train ready for unloading	Ludwigshafen (Rh) BASF Ubf		

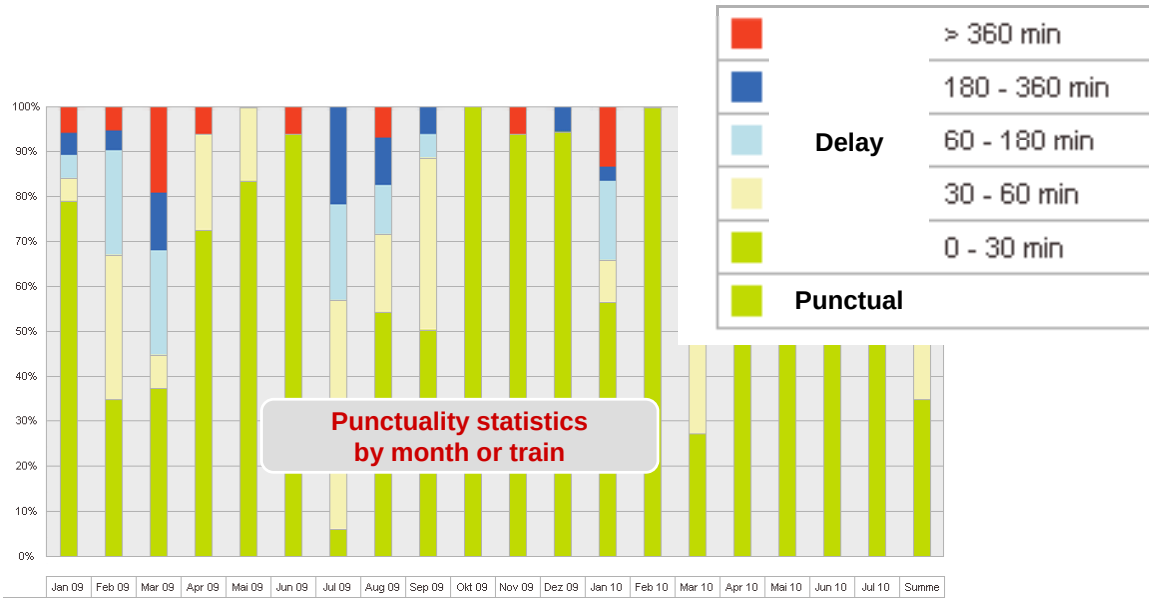
- Train status information: on the way, arrived, train ready for unloading
- ETA information allows optimised dispatching of last-mile trucks.

Train Monitor - HIM

Information Management

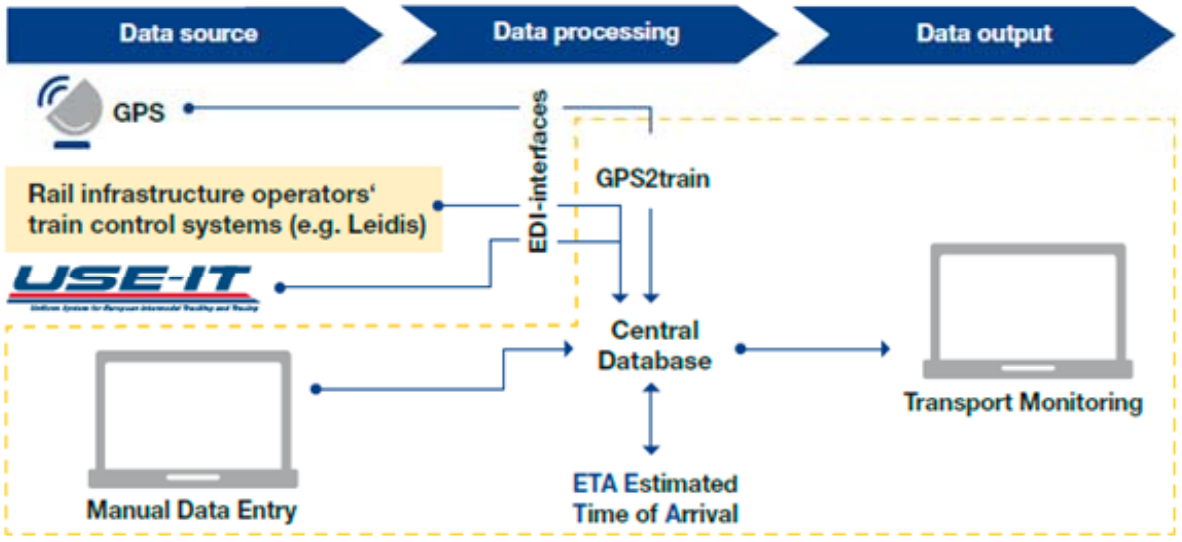
- Exchange of further train operation information, e.g.
  - Irregularities;
  - wagon detachments.
- Data storage in the joint Train Monitor database
- Information channels
  - Display of data within Train Monitor;
  - Email notifications to recipients;
  - Interfaces to other IT systems.

File&View



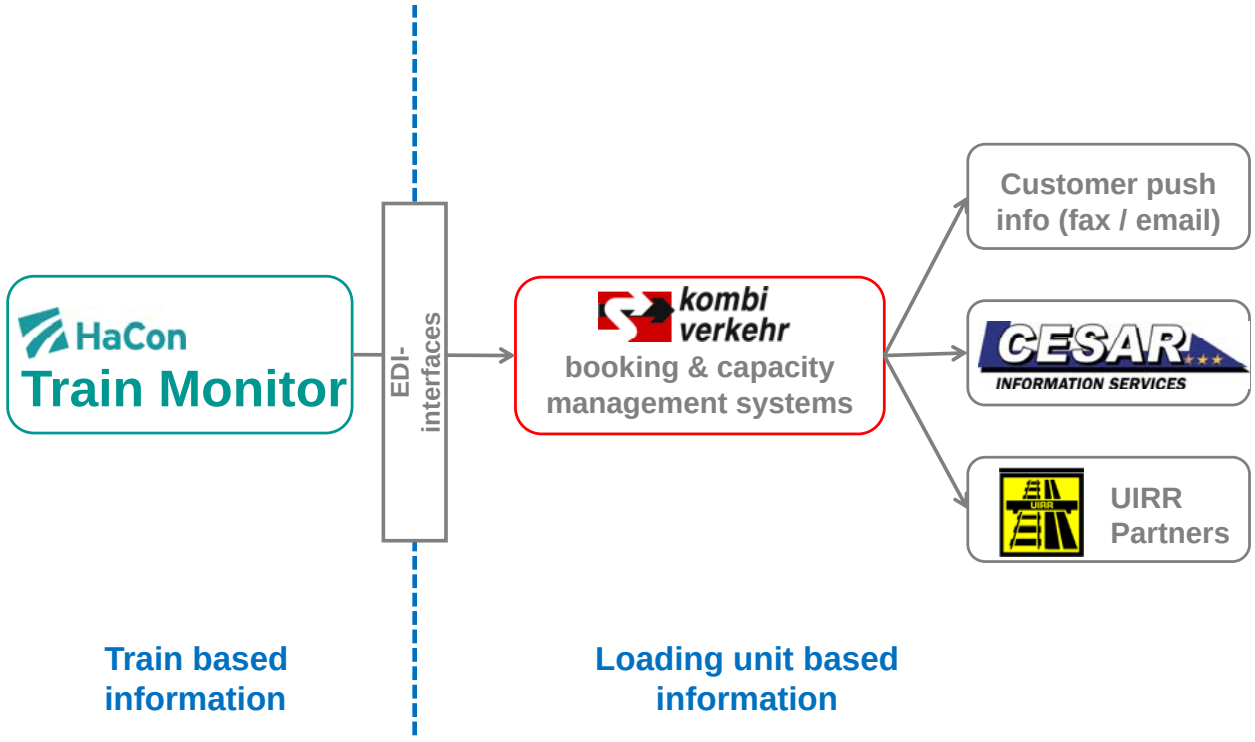
- All data of operated trains is stored in a database
- Detailed analyses of previous train runs/operations;
- Individual quality statistics (for single trains or for groups of trains).

Train Monitor – EDI concept



- Further data sources possible, e.g. from RNE TIS

Real-time customer information

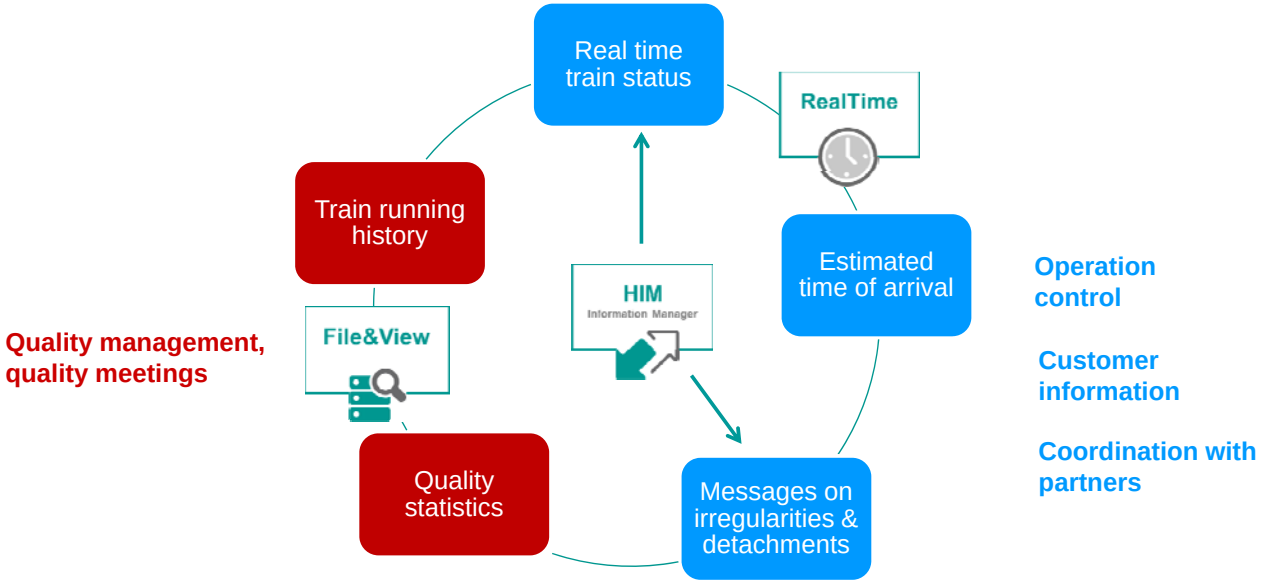


Train Monitor implementation

Kombiverkehr

- Pilot system developed and operated within the CREAM project (2007-2011) in collaboration with Kombiverkehr
- Monitoring of roughly **160 trains per day**.
- Train Monitor is mainly used by the employees in the Kombiverkehr **transport monitoring centre.**
- Train Monitor enabled a partial automation of processes e.g. for the generation of quality statistics, data gathering and distribution.
- After full implementation of Train Monitor these employees are able to organise their daily work more efficient. Consequently they can concentrate their efforts on other purposes e.g. for resolving specific problems in the operation.

Train Monitor components and purposes



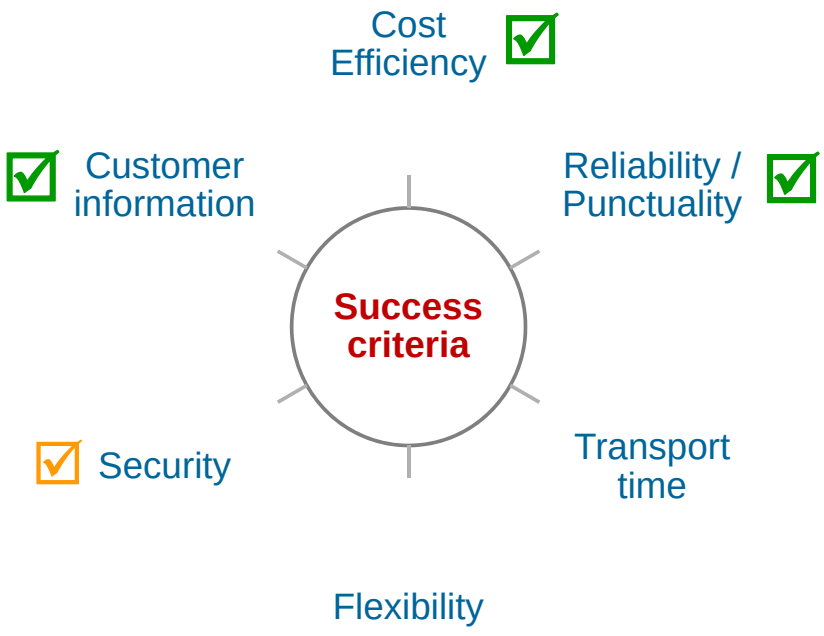
Train Monitor implementation

Requirements for full exploitation of system capabilities

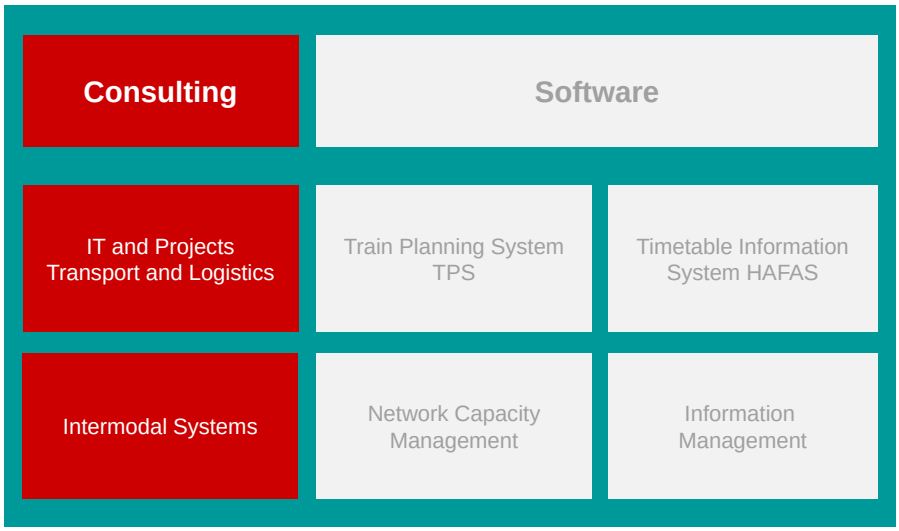
- Secure reliable data feeding of system
- Coordinate information procedures with operating partners; prevent alternative information flows
- Integrate system in working / QM processes; if necessary amend processes
- Ensure continuous system developments according user needs and changing framework conditions, e.g. TAF-TSI, Apps, further features and viewing options,…

Main mode decision criteria

Contributions with regard to market requirements / success criteria



HaCon company profiile



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