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Multimodal Transport:
Experience of Interporto Bologna

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INTERPORTO BOLOGNA SpA

PortNet

Bologna 8th-11th May 2007

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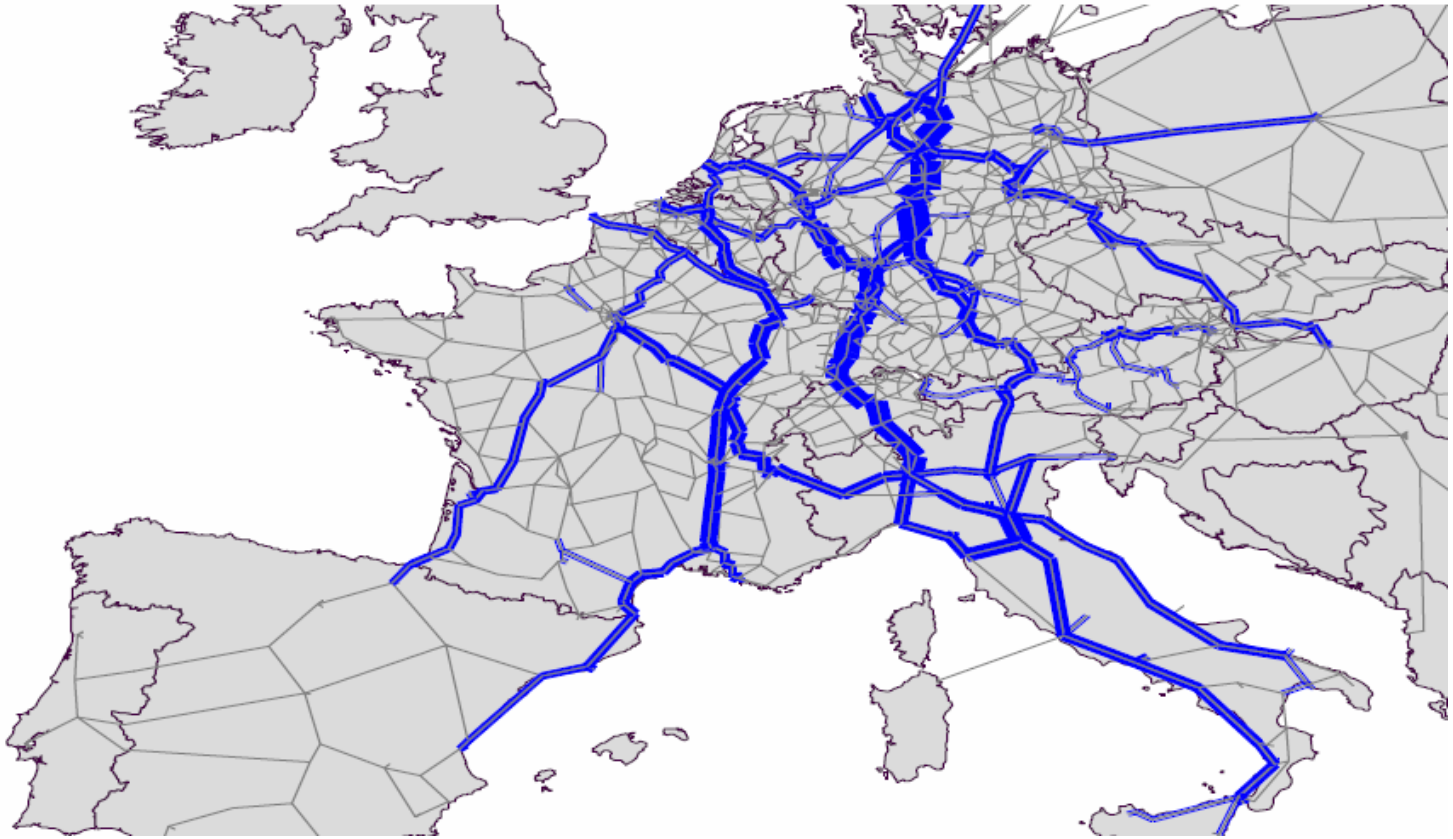
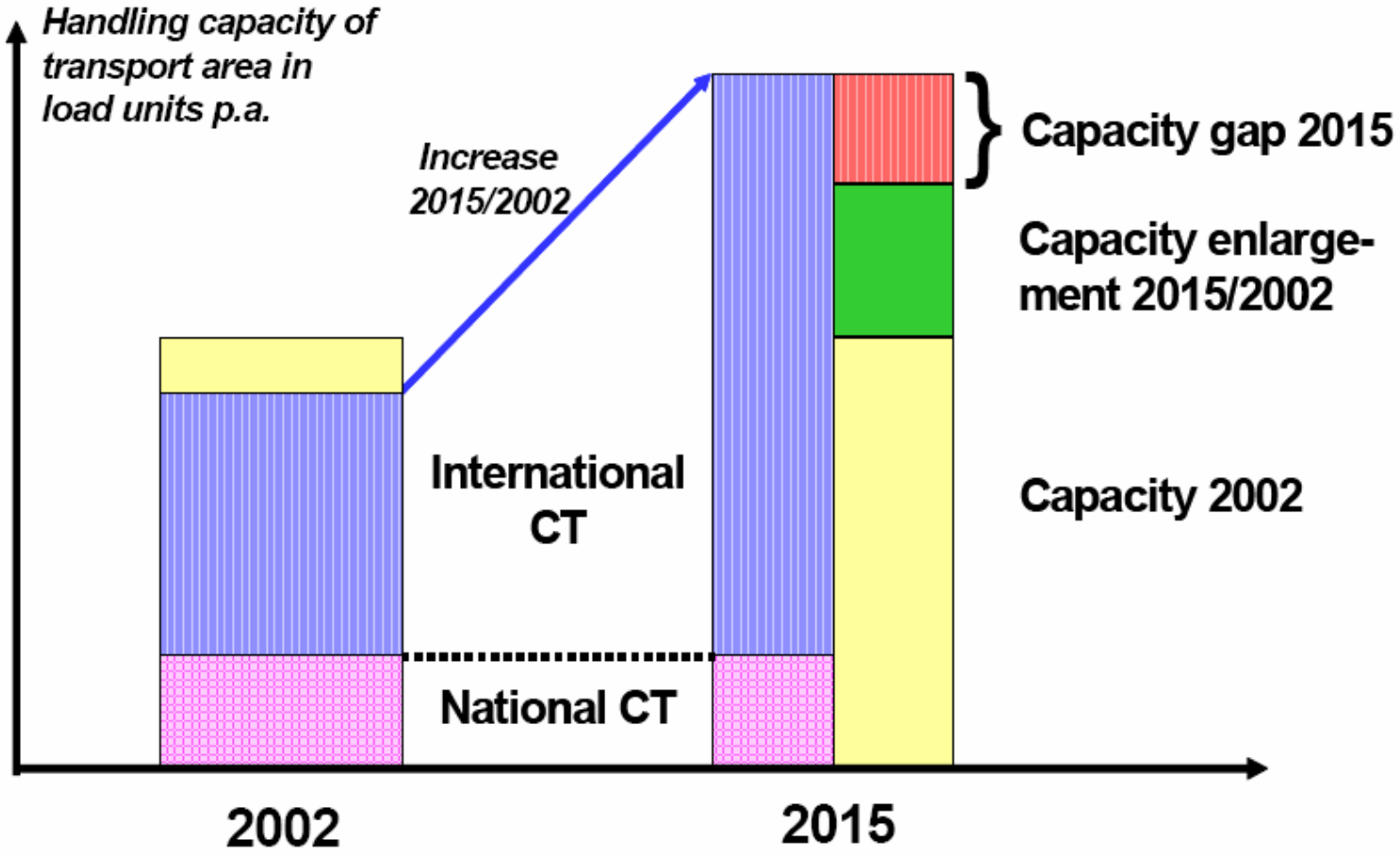
THE COMBINED FREIGHT TRANSPORT
Eu scenario and Forecast

Unaccompanied Rail-Road Transport
Transport flows per corridor (2005)



Source: DIOMIS project

Capacity gap 2015 (Inland Terminals)



Source: DIOMIS project

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EU FORECAST - 2

Total international combined transport

Market segment	2002 (net tonnage)	2015 (net tonnage)	2002/2015
Unaccompanied combined transport	**44.1 mill. t**	**103.6 mill. t**	**+ 135 %**
Accompanied combined transport (rolling highway)	**10.4 mill. t**	**12.4 mill. t**	**+ 19 %**
Total combined Transport	**54.5 mill. t**	**116.0 mill t**	**+ 113 %**

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THE ROLE of FV

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DEFINITION OF FREIGHT VILLAGE

A **freight village** is a defined area within which all activities relating to transport, logistic and distribution of goods, both for national and International transit are carried out by various operators.

A freight village must also be equipped with all the public facilities to carry out the above mentioned operations. In order to encourage intermodal transport for the handling of goods, a freight village must preferably be served by a multiplicity of transport modes (road, rail, deep sea, inland waterway, air).

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ROLE OF FREIGHT VILLAGE

- Offer alternative transport solutions more efficient and complete
- Combine different modes of transport to move freight from origin to destination (***comodality***)
- Manage the exponential increase of freight transport in the optimal way

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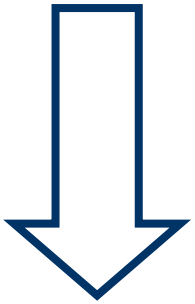
MAIN OBJECTIVE



INTERMODALITY/COMODALITY

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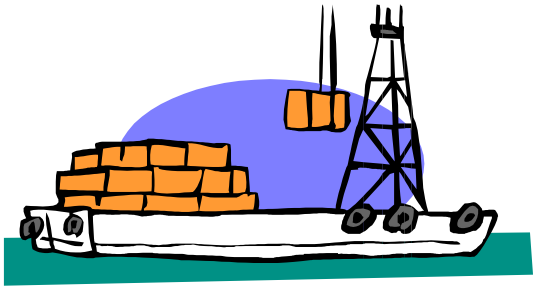
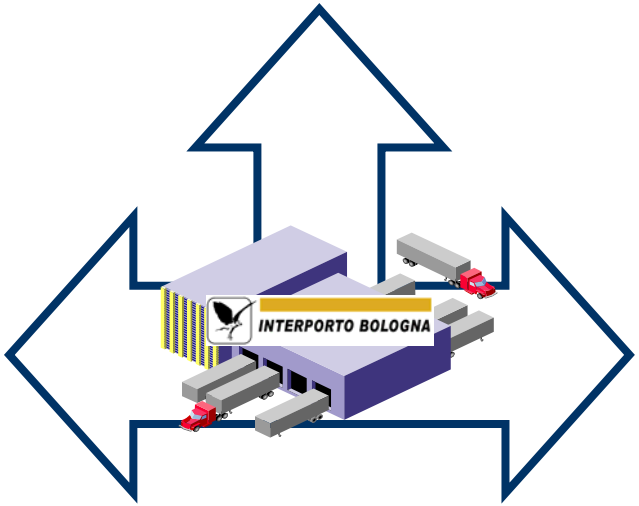
INTERMODALITY / COMODALITY

Maritime Connections





Rail Connections

Road Connections

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Figures and Specifications

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INTERMODAL FACILITIES

- 2 TERMINALS of about 14 Ha each.
- Bulk Terminal (*800.000 € investments*)
- 7 mobile cranes / 42 tons
- Total Storage Capacity – 8.000 TEU
- Total handling volume 127.000 Loading Units
- Future handling capacity – 300.000 Loading Units

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FIGURES 2005 vs 2006

	2005	2006
1. Total freight transport	4.510.000 tonn	5.002.000 tonn
Rail	*2.210.000 tonn*	*2.432.000 tonn*
Road	*2.300.000 tonn*	*2.570.000 tonn*
2.Intermodal trains	132/week	196/week
3.Wagons	29.102	56.412
4.Transport and logistics companies	100	100
5.Increase of logistics demand	150.000 covered sqm	350.000 covered sqm

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Initiatives and strategies

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INTERMODAL RAIL SERVICES

1. Eight Project – Connections with ports of Leghorn and Ravenna
2. Bologna – Ravenna connection
3. Train "ESPRESSO" Bologna - Marcianise
4. Gravel trains

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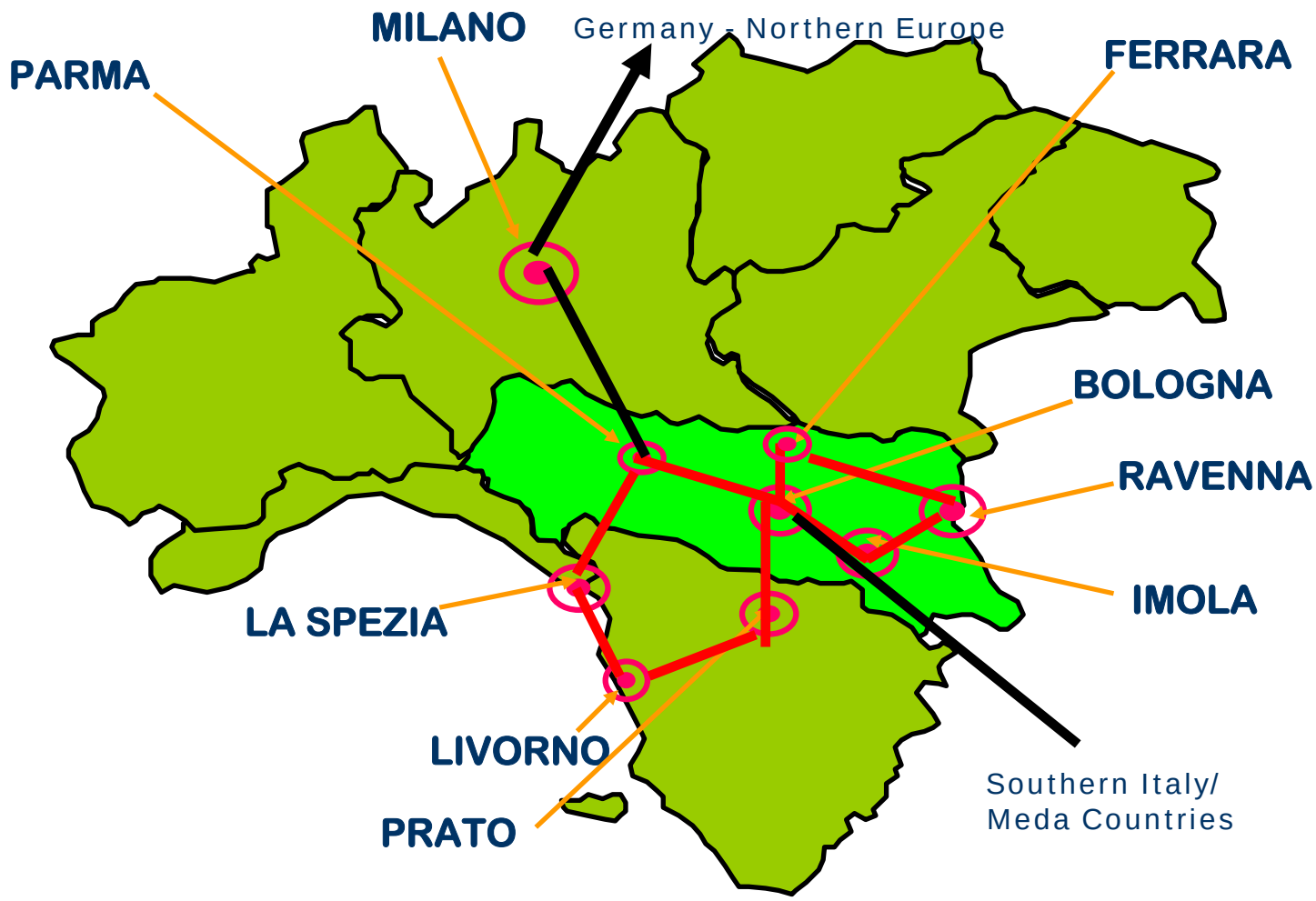
THE EIGHT RAIL SERVICE



The eight - a good case to develop intermodal services

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BOLOGNA - RAVENNA

Bologna-Ravenna rail service connection

Sinergy between maritime port and Freight Village

2 Trains per week

8500 Lorries/year shifted from Road to Railway

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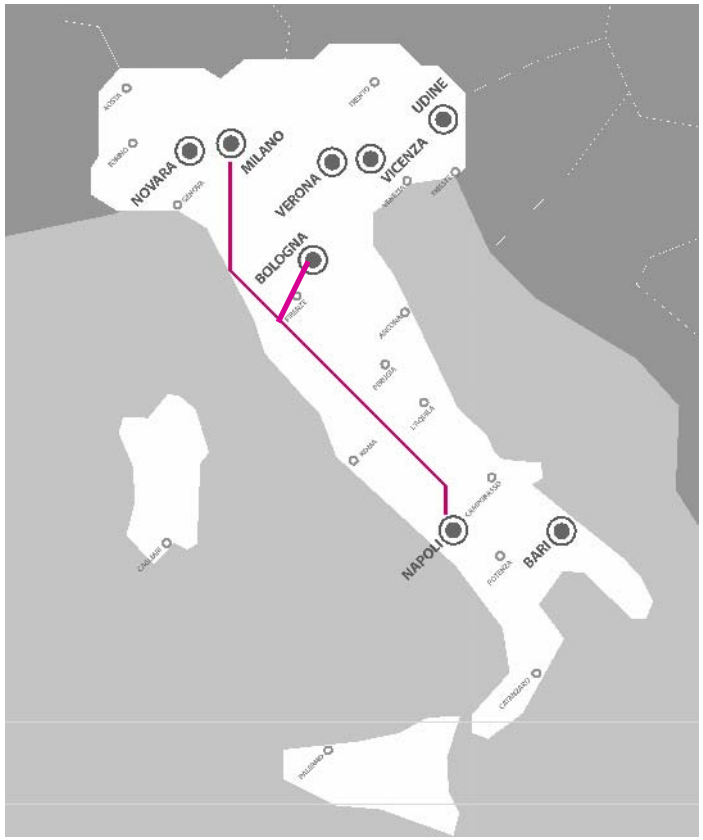
BOLOGNA - MARCIANISE



Rail Service "ESPRESSO"

5 trains per week

8.080 wagons operated

Door 2 door services

Rail/Road connection to operate complete services taking care of last mile delivery (daily connections between two freight villages)

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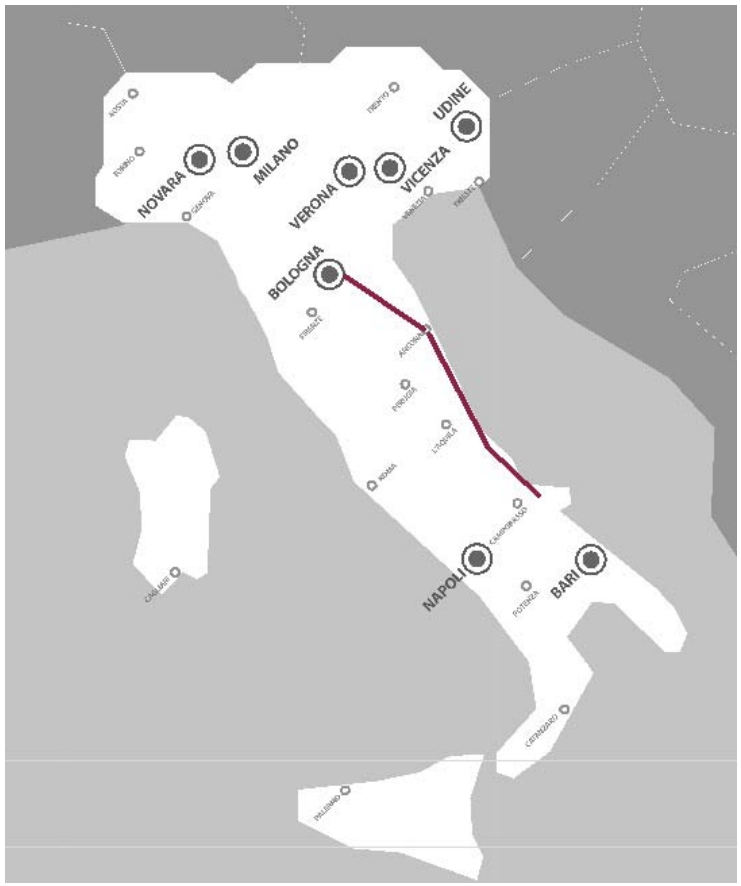
GRAVEL TRAINS



4 trains per week

Transporting 184.000 ton/year

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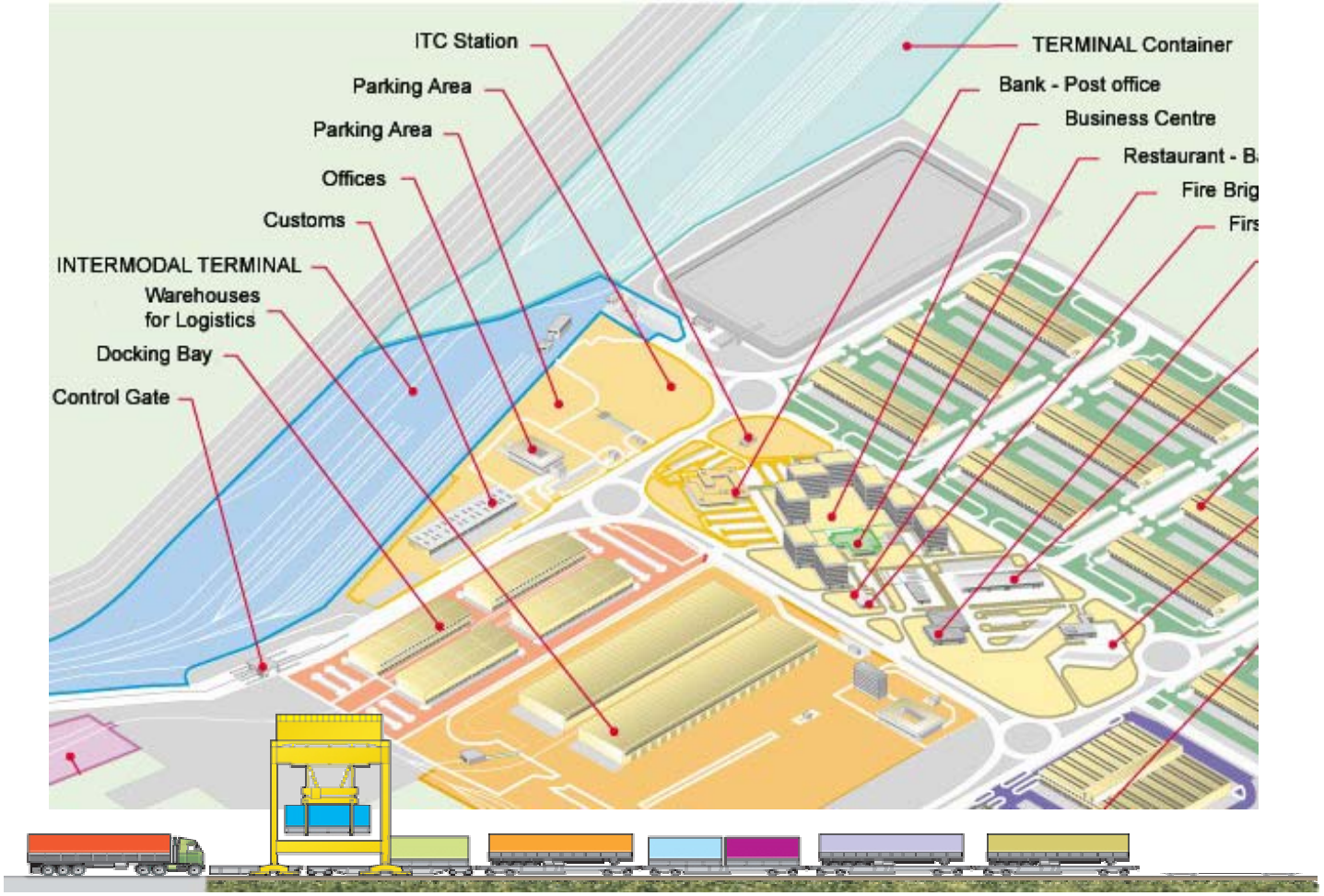
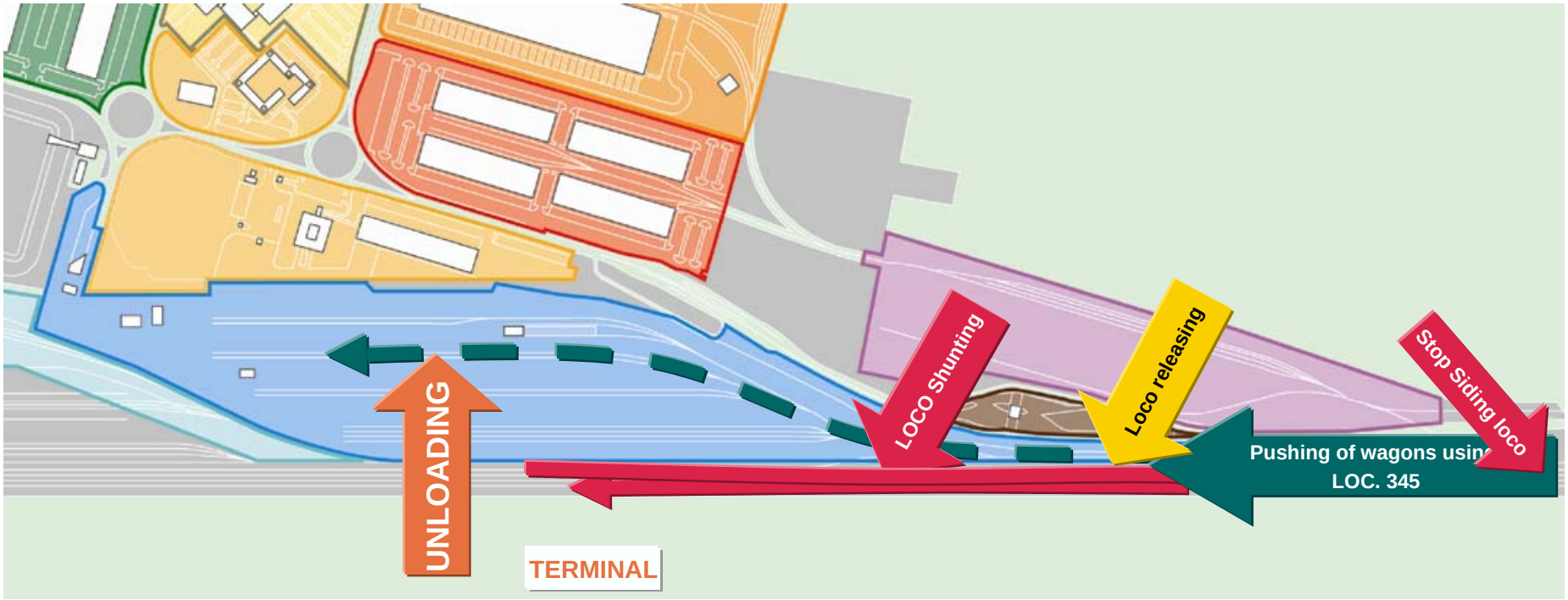
IT Solutions Supporting Rail activities

SHUNTING within TERMINAL Area



SHUNTING within TERMINAL Area

Shunting Sequence for train arrival



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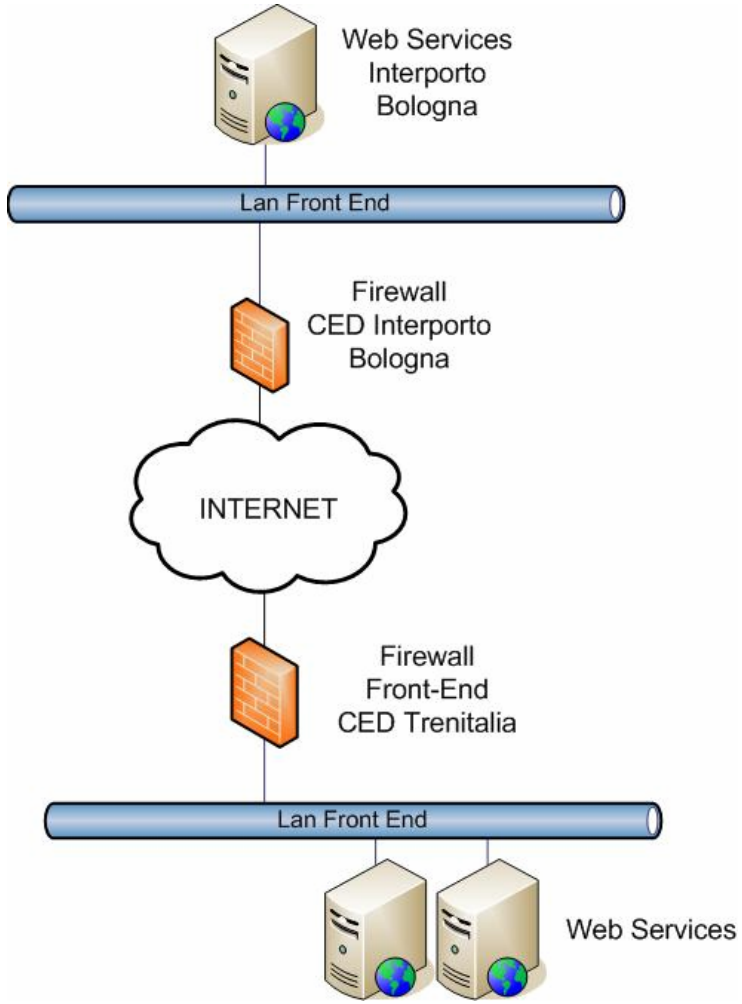
TMOVE – Shunting solution

Data exchange with TRENITALIA takes place by 2 Internet Web Services :

-Web Service 1: is located in the T_move server which is used for conforming TMOVE with SIR data;

- Web Service 2: is located in the Trenitalia CED. It acquires all updates from T_move server and process useful information to send to T_move server itself



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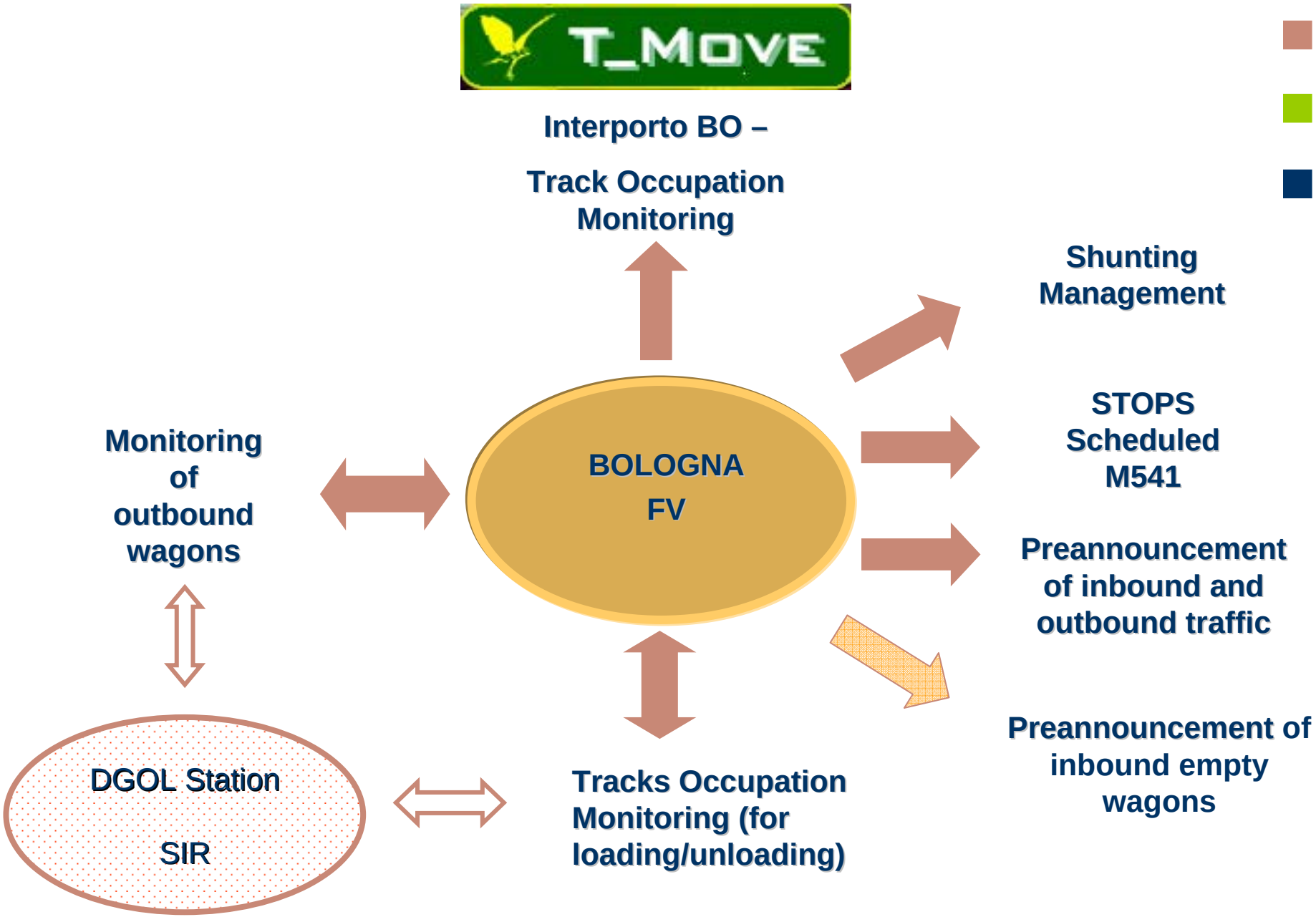
TMOVE – Shunting solution



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TMOVE – Shunting solution

IN BOUND Process

Monitoring and Traffic Management → **Planning and yard management** → **Storing management**

- Trains and wagons with final destination IPBO, are monitored from departure to their stop on the track for loading and unloading operations
- Real time evaluation of ETA, details on the full delay on route.
- **Composition of the train** : type of goods, wagons allocation, wagon features

Planning:

- Shunting (loco used, shunters workshift)
- Loading/unloading operations and related production activities
- Stop riduction time at siding

Carichi					Vuoti Utilizzabili					Vuoti Riparandi				Altro			
8					3					1				0			
Rotabile	Pos. Tre.	Cod. Bin.	Pos. Bin.	Stt. Log.	Stt Fis.	Cod. Rip.	Staz. Orig.	Staz. Est.	Staz. Dest.	Cod. Lotis	Cliente	Ope. Tec.	Cod. Ava.	Mas. Fren.	Mas. Lorda	Tipo Merce	Dati Vari
318053584245	1			V	CP	102	010033		072264	70900	999999			53	72	72044910	
318054009150	2			V	CP	102	010033		072264	70900	999999			52	73	72044910	
318339161891	3			V	VR	R3F	069153		072264	70900	S1----		08	24	23		
338579160072	4			V	VU	090	002485		072264	70900	018039			36	35	99220000	
338779170996	5			V	VU	090	002485		072264	70900	018039			34	32	99220000	
318353032101	6			V	CP	E17	010306		072264	70900	018266			48	63	72042900	
318353769009	7			V	CP	E27	010306		072264	70900	018266						
318353016773	8			V	CP	E17	010306		072264	70900	018266						
318353200450	9			V	CP	E17	010306		072264	70900	018266						
318353002377	10			V	CP	E17	010306		072264	70900	018266						
318353014679	11			V	CP	E17	010306		072264	70900	018266						
318399450010	12			V	VU	U28	017020		072264	70900							

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INFORMAZIONI TRENO
55567

Ultima stazione di rilevamento:
chiaravalle h 11.35 (rit. 6')

Arrivo previsto:
15:54

NB. Fonte dati Mercurio(RFI)

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TMOVE – Shunting solution

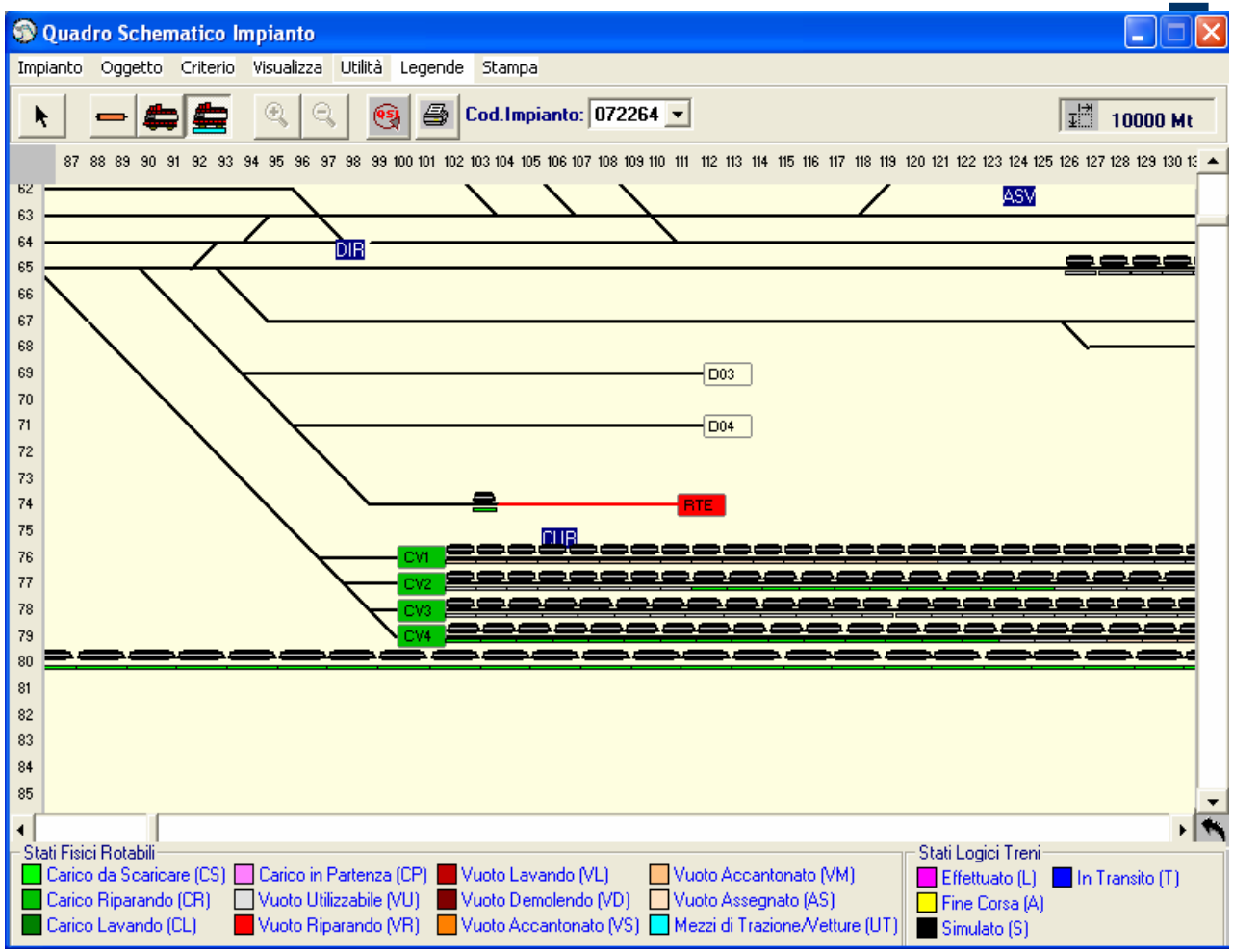
IN BOUND Process

Monitoring and Traffic Management → **Planning and yard management** → **Storing management**

The picture shows:

- Tracks
- siding tracks for loading and unloading Operations

The tracks occupation is updated in real time starting from the shunting operations up to the arrival and departure time.



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SHUNTER – Shunting Automation

- Requirements
  - Generate shunting operation in situation where more than one train has to be composed;
  - Allow to set up priorities for trains;
  - Minimize the number of shunting operation;
  - Consider current way in which shunting is performed;
  - Consider shunting among different terminals inside the same freight village

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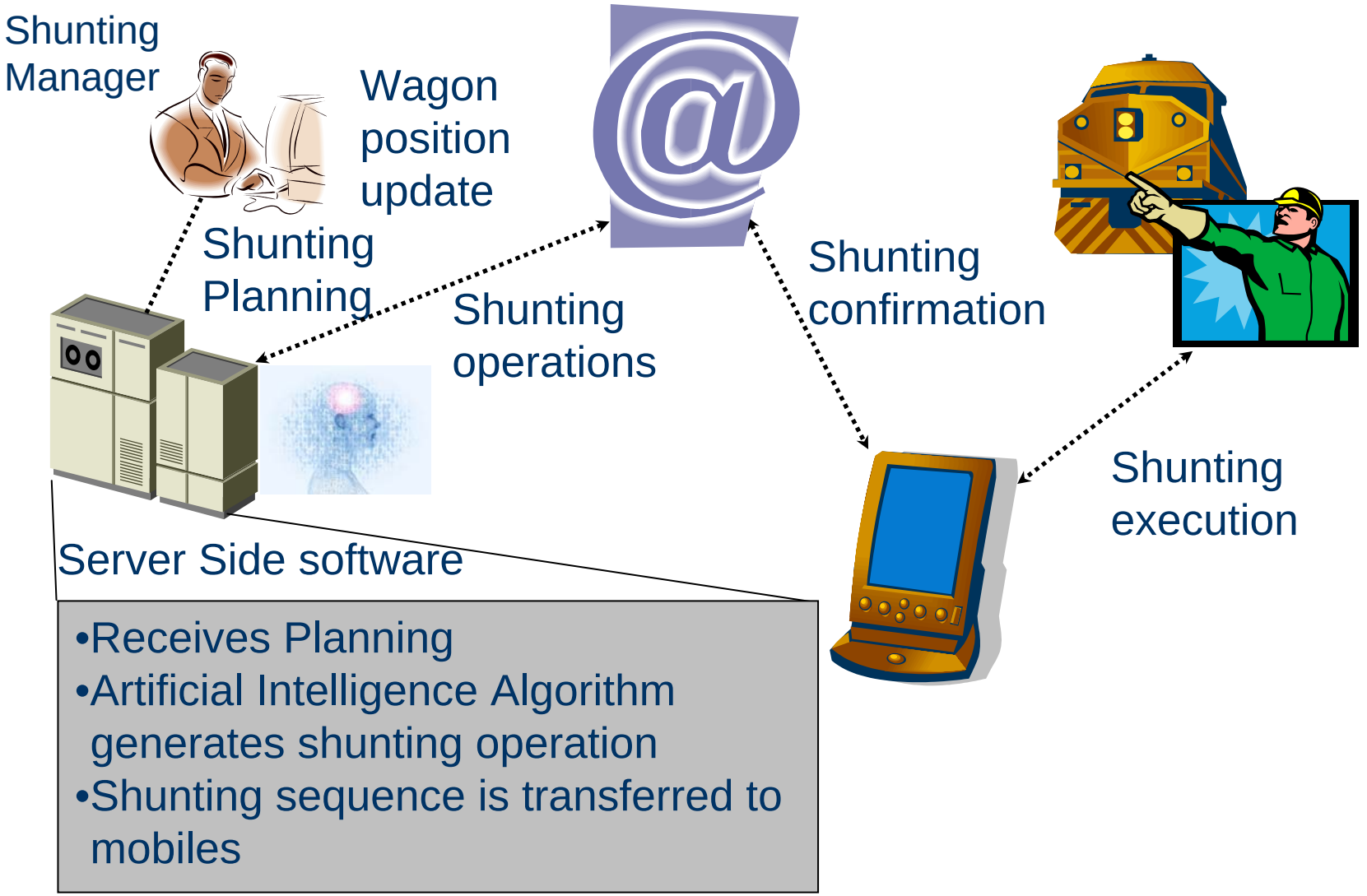
SHUNTER – Shunting Automation



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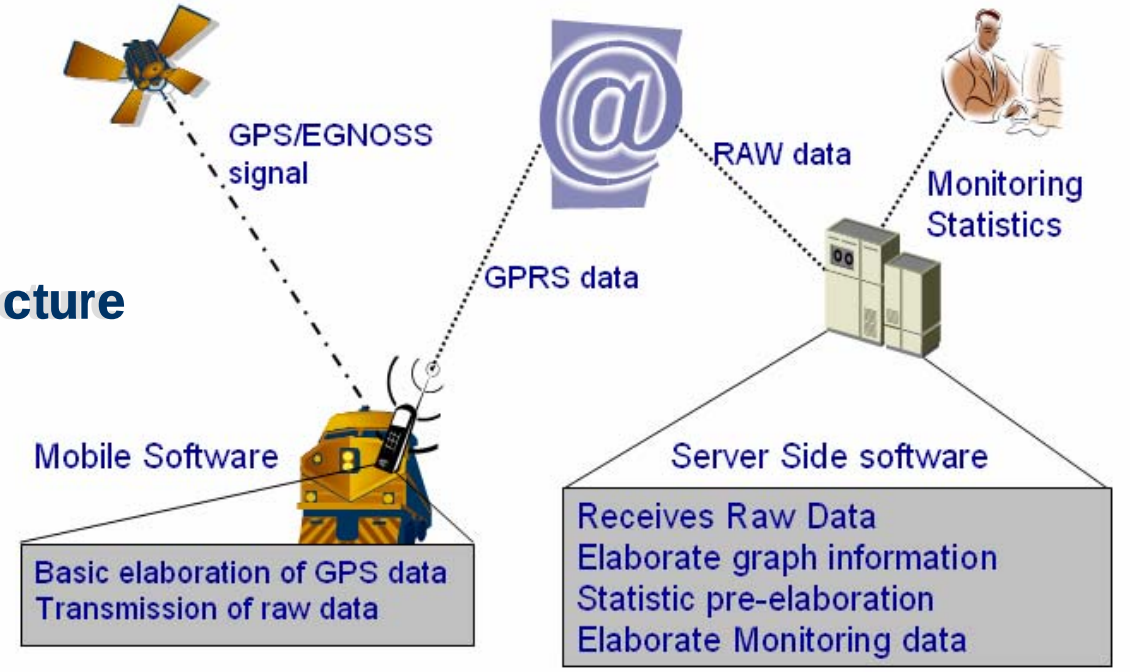
SIMOG – GPS Monitoring

- Requirements:
  - Monitoring of locomotive position (for security reason);
  - Monitoring of locomotive speed (for security reason);
  - Generation of statistics related to paths, timetables, and several other parameters;
  - History of alarms.

SiMoG Architecture



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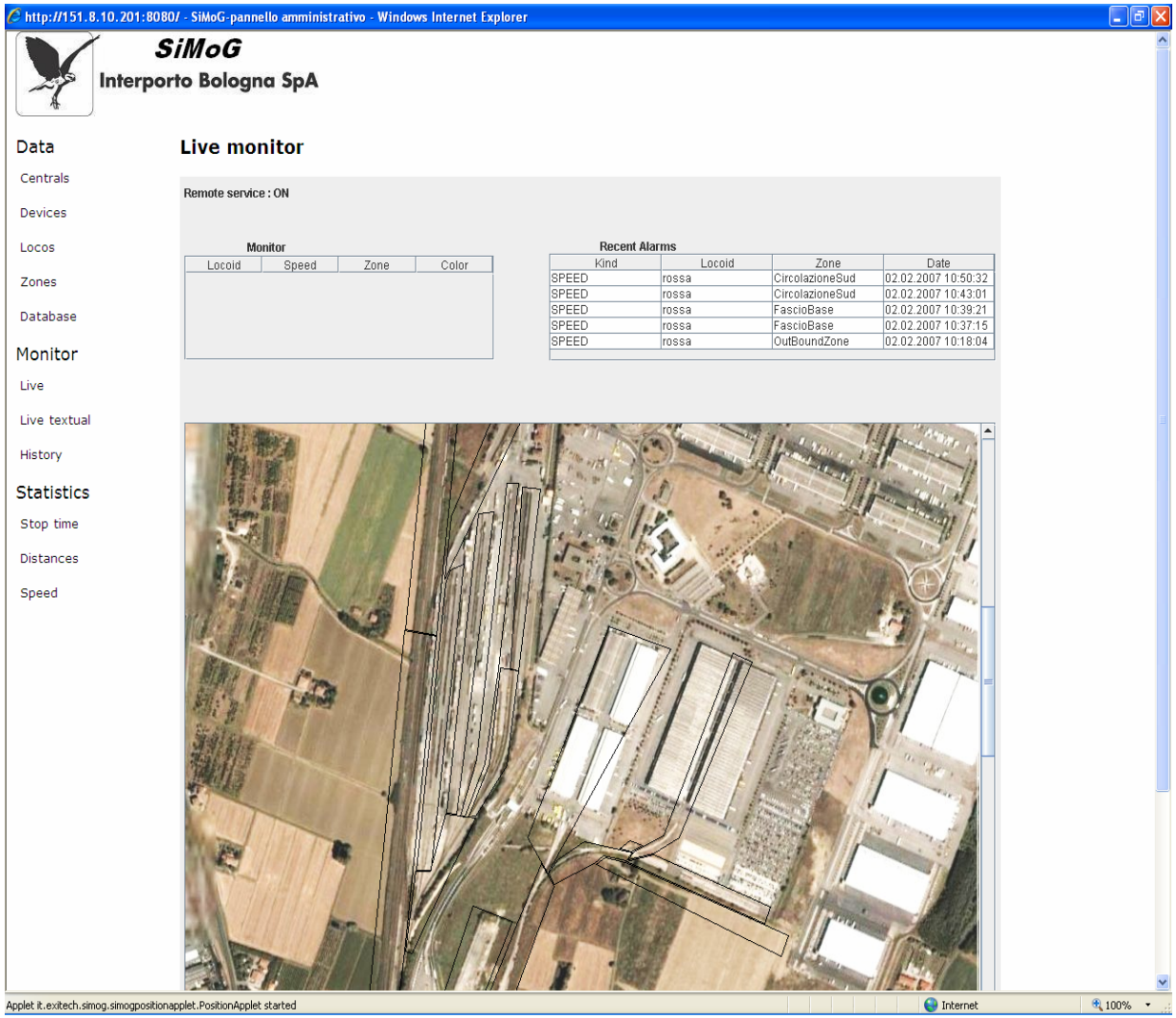
SIMOG – GPS Monitoring



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Thanks for you attention

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