European Bus System of the Future

2011 Annual Polis Conference and Polis Annual General Assembly

Umberto Guida – EBSF Project Director – UITP

Brussels, 29th November 2011

EBSF – General Information

- Large Scale Integrated Project funded by the European Commission DG-RTD (Directorate General for Research)
- The first about Urban BUS

  - Total Budget / Funding: 26 MEUR (16 MEUR)
  - 7th Framework Programme of the EU
  - 4 years project 2008-2012
  - 47 Consortium Partners from 10 Countries
  - 22 more members and 5 other Countries in User Group
  - More than 400 European experts involved in project activities

- EBSF coordinator: UITP - International Association of Public Transport
  - UITP represents about 3,400 mobility actors from 92 countries worldwide
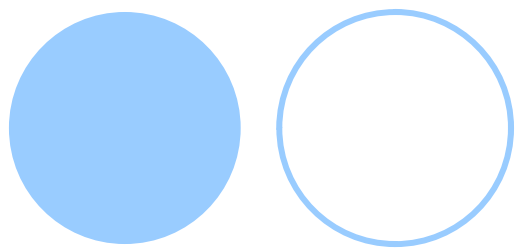
EBSF – Approach

"The whole is more than the sum of its part"

Aristotle, Metaphysics

Urban Infrastructure

Bus Vehicle

Operations

The EBSF Consortium

ASSTRA, ATV Verona, CRF, D'Appolonia, Digigroup, FIT, Uni Roma 3, Uni Roma/DICEA, ATAC Rome, ATM Milan

ACTIA, CERTU, INEO, INRETS, Iveco Irisbus, Nantes Metropole, RATP, UTP, Veolia-Transdev

BIS Bremerhaven, Evobus/Mercedes, Fraunhofer, Berends, Hübner, INIT, MAN, PE Int.,VDV, Bremerhaven Bus

Chalmers, Vasttraffik Gothenburg, Hogia, Volvo, Scania, Pilotfish

CRTM, TRANSYT-UPM, TEKIA, CEIT

TEC, UITP

TIS

BVK Budapest, Vultron
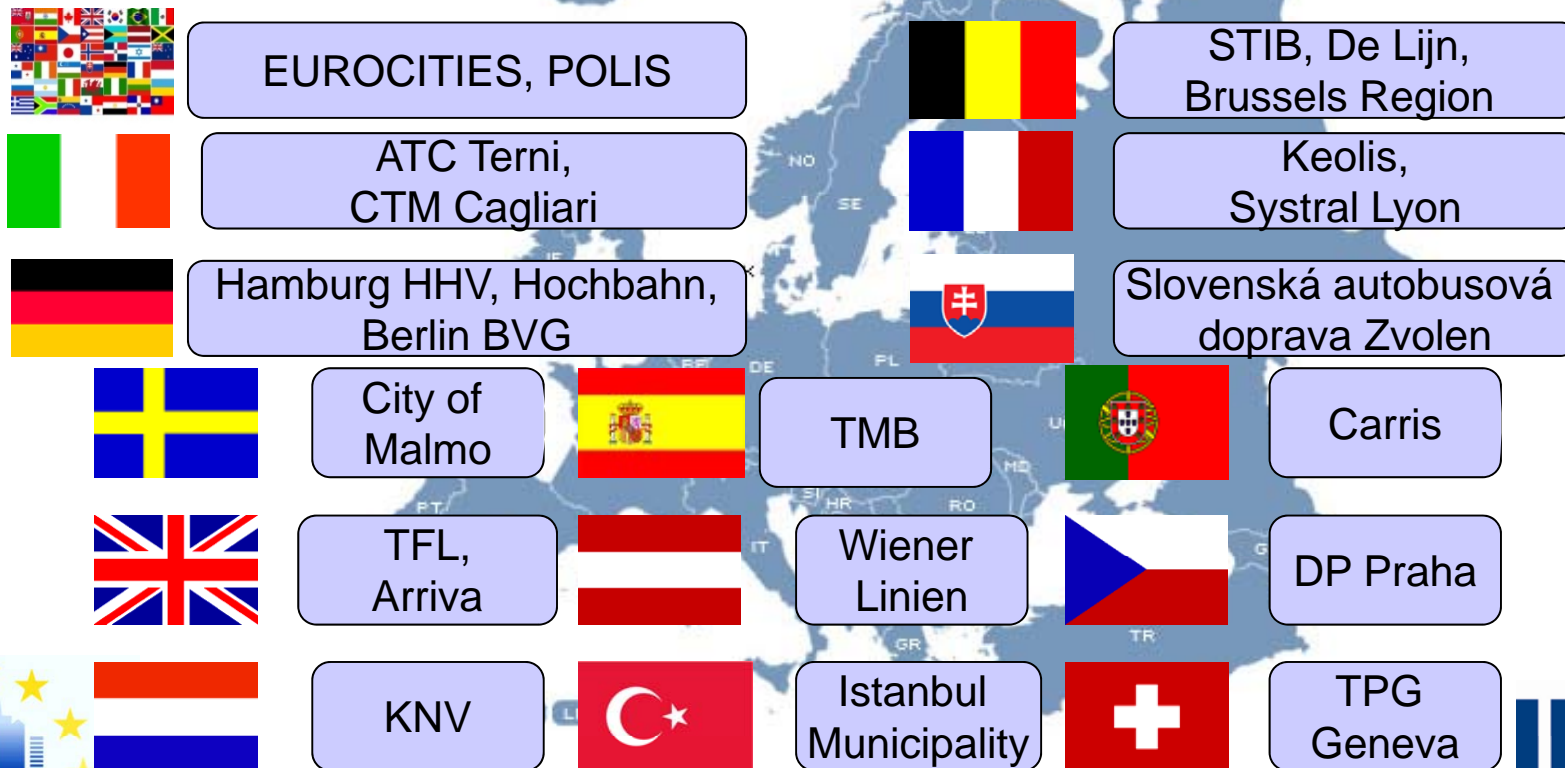
RATB Bucharest

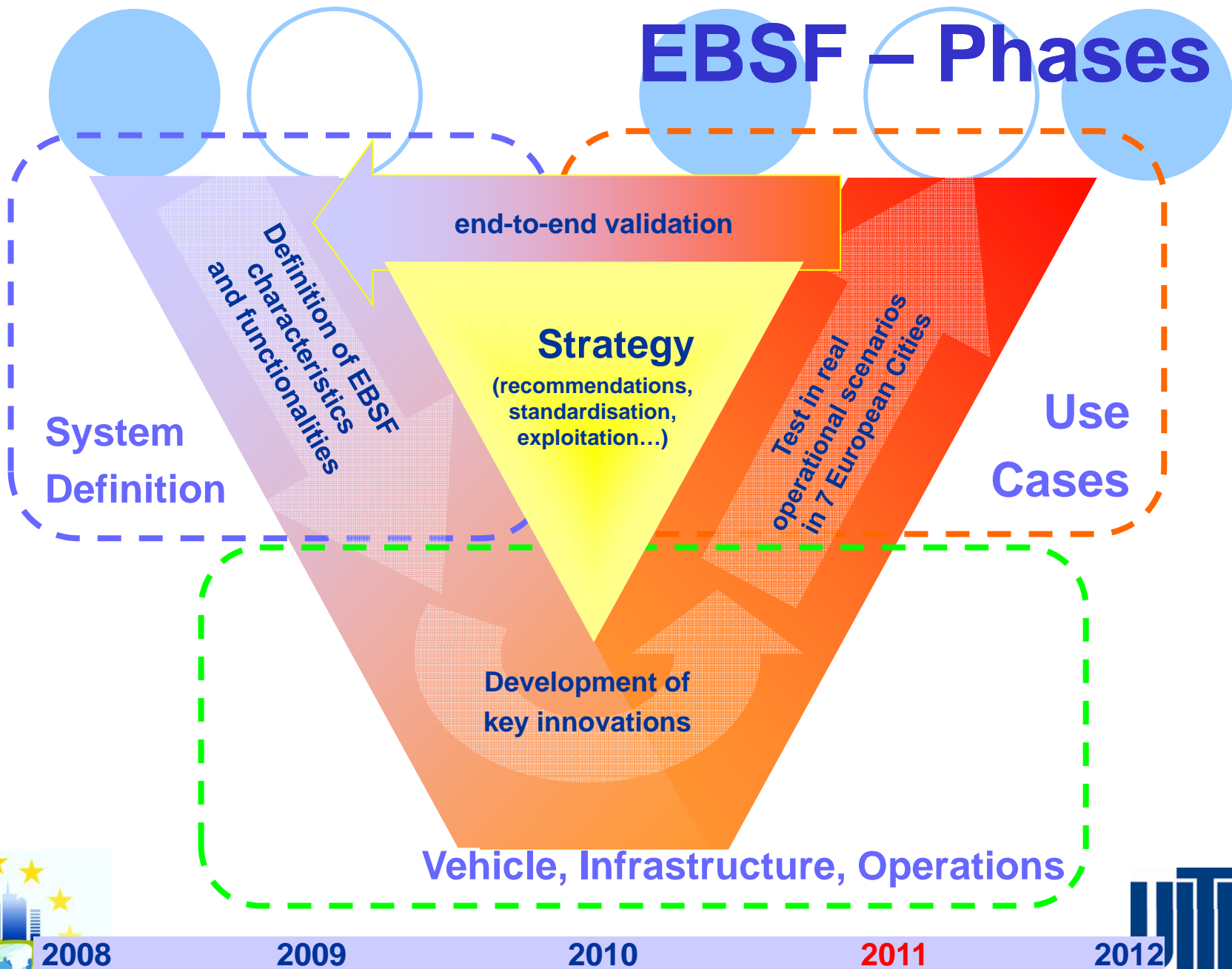Newcastle University

LU AD MC LI VA MT

The EBSF User Group

Follow project development and assess major aspects of the EBSF system definition

EUROCITIES, POLIS	STIB, De Lijn, Brussels Region
ATC Terni, CTM Cagliari	Keolis, Systral Lyon
Hamburg HHV, Hochbahn, Berlin BVG	Slovenská autobusová doprava Zvolen
City of Malmo	TMB	Carris
TFL, Arriva	Wiener Linien	DP Praha
KNV	Istanbul Municipality	TPG Geneva

EBSF – Phases

end-to-end validation

Strategy
(recommendations,
standardisation,
exploitation…)

Definition of EBSF
characteristics
and functionalities

Test in real
operational scenarios
in 7 European Cities

**System
Definition**

**Use
Cases**

**Development of
key innovations**

Vehicle, Infrastructure, Operations

2008   **2009**   **2010**   **2011**   **2012**

Developing Key Innovations for Vehicle

Accessibility, passenger flow, dwell time

Internal Modularity

Energy Management Strategies

Driver Workplace ergonomy

External Modularity

Accessibility for special needs users

Advanced Steering Techniques

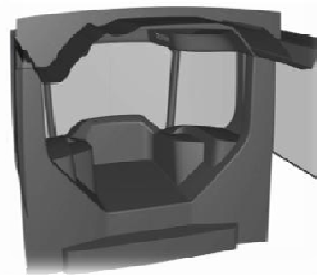Standard IT platform on-board (Passenger info, Remote Maintenance…)
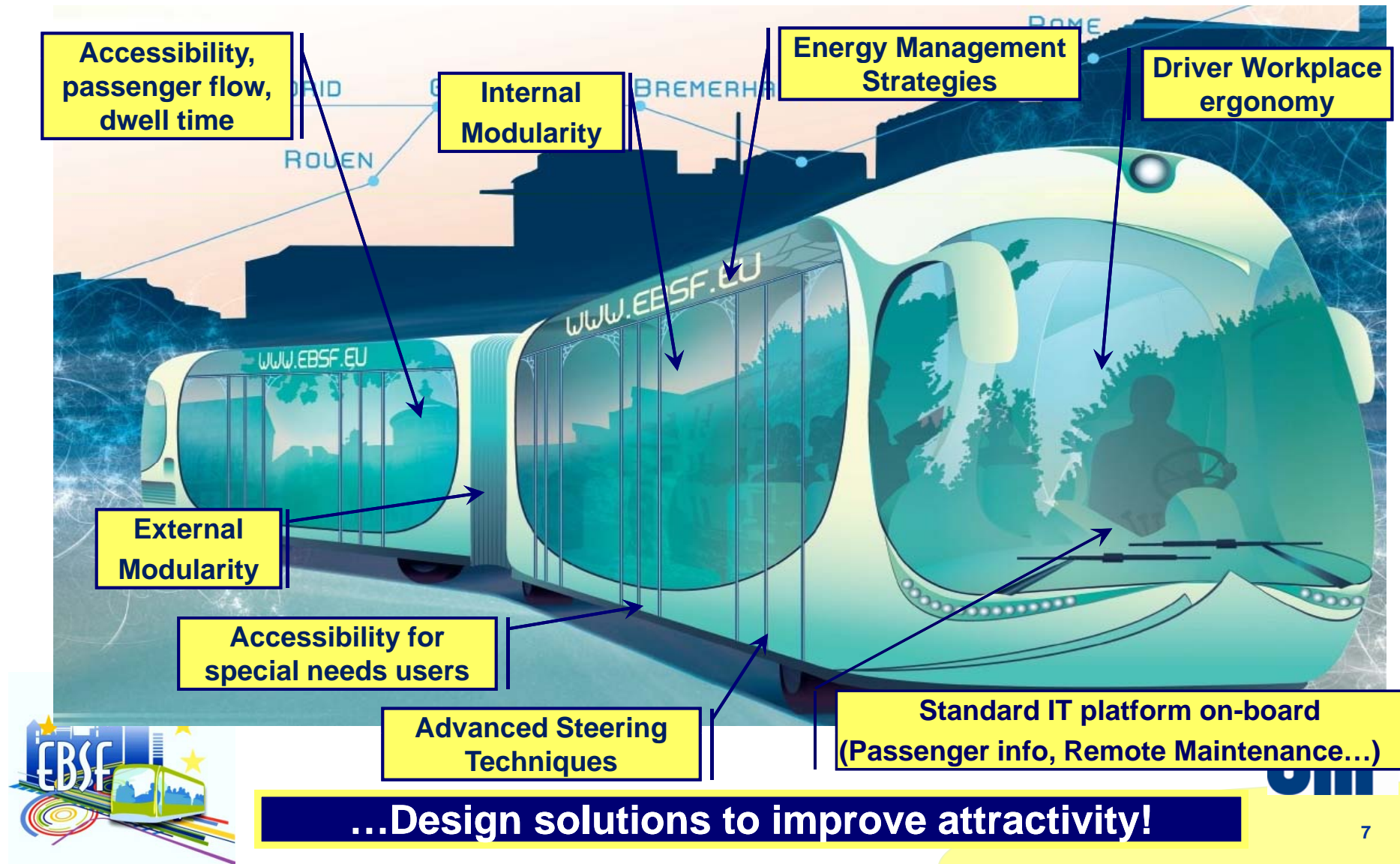
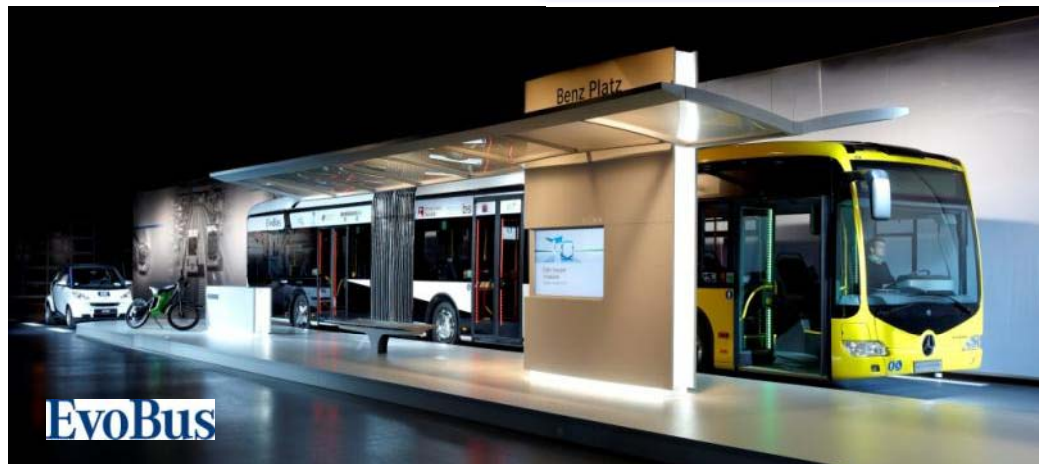…Design solutions to improve attractivity!

Front with short overhang

Drivers area

5 Prototypes / Bus Demonstrator
~120 Retrofitted operational buses

~25 Upgraded Bus Stops
5 Upgraded Back-offices
1 Bus Stop Prototype

Key Innovation areas for Urban Infrastructure and Bus Operations

Interexchange stations

Intermodality with other PT and complementary transport modes

Efficiency of travel (from pre-trip information to ticket validation)

Transport policies and Traffic rules for urban bus services

Crossing Bus lines

Operational costs of innovation

Bus Stop scalable design and Prototype

Standard IT platform for Back-Office Test-bench

D 3.1.1

Transport policies and Traffic rules for optimal bus services

DPI at interurban bus stop

Bluetooth
WiFi

Easy and reliable information

Accessibility for all user categories

Offer of services

Location

CONSORCIO TRANSPORTES ★★★★ MADRID

Main Focus: the user

Powerful & coordinated management

Integration of private and public modes
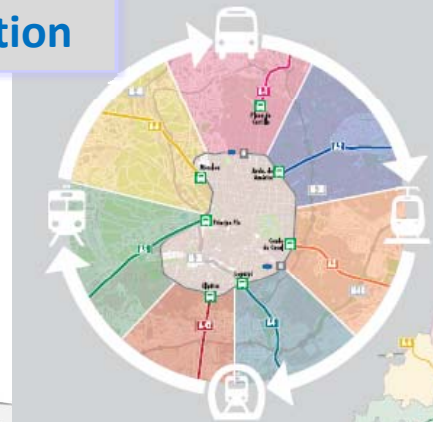
Fast and easy transfer

Quality, comfort, safety and security of waiting areas

Polis Co
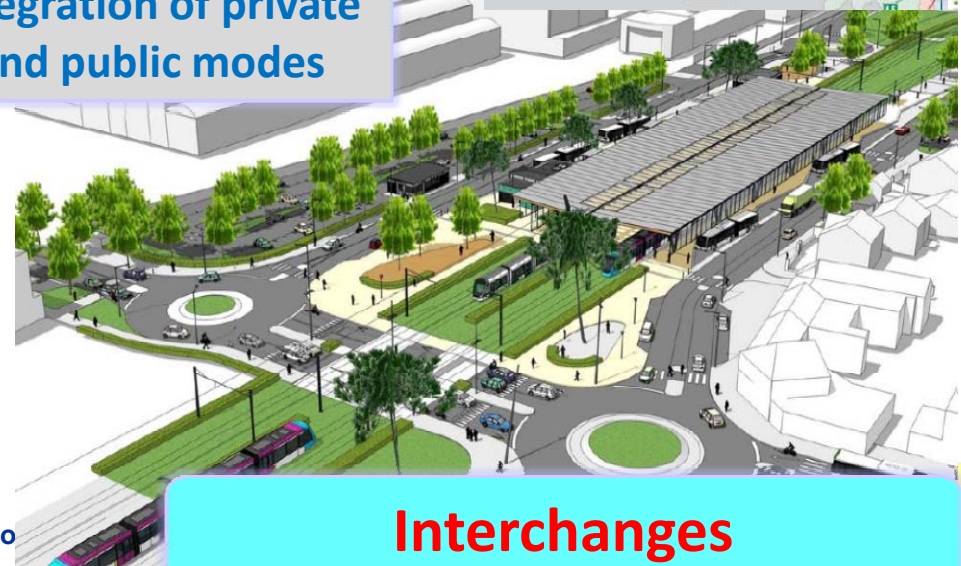
Interchanges

Services ajoutés
Services actuels

Scalable design

Téléphone
+ messages vidéos

EBSF Bus Stop

Pub

Gare de Lyon – Diderot

N01 M33 M34 57 61 91 Gare de Lyon – Daens

RATP

Infos
quartier
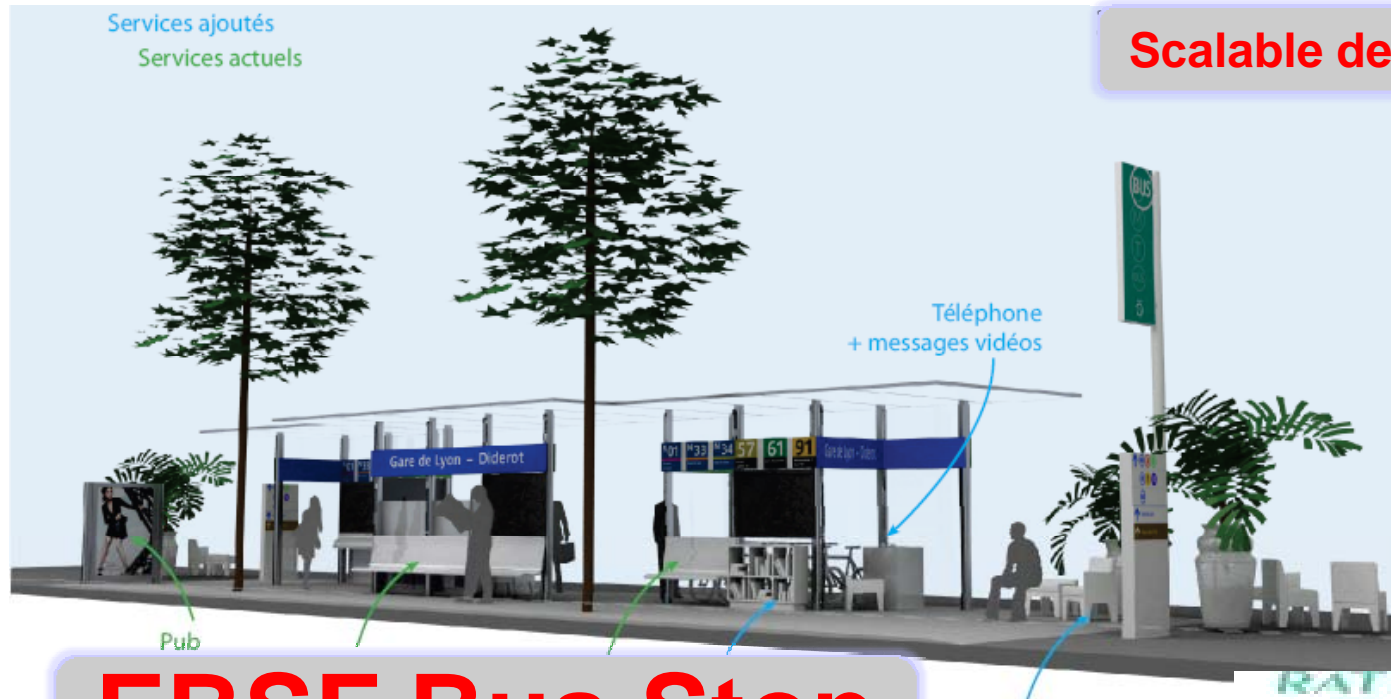
**Prototype
realisation**

Poste

Station coté trottoir   Assembly

RATP
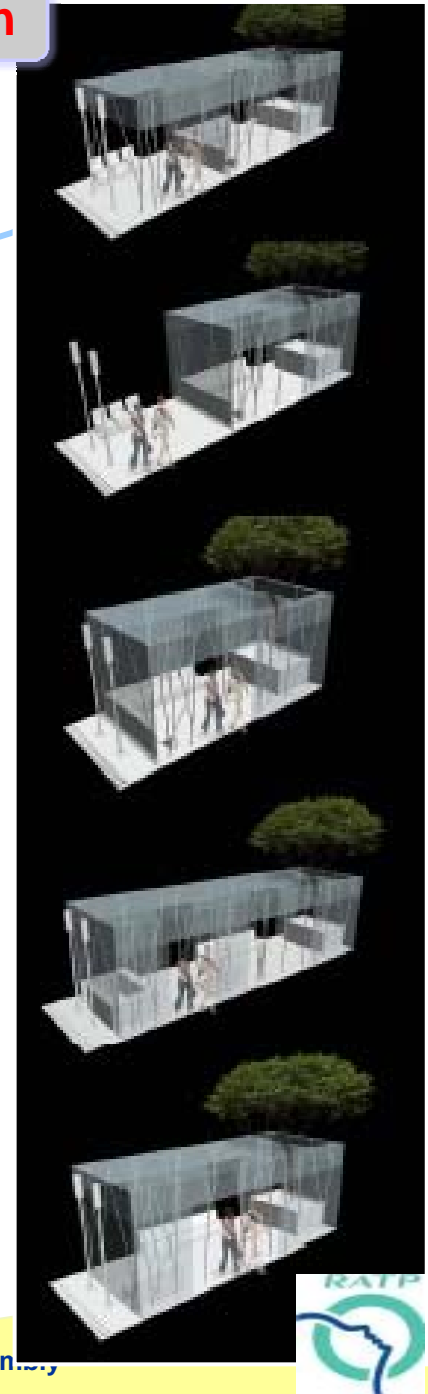
Simulator A

Simulator B

AVMS Integrator

SIRI

wIFI / GPRS

Interfaces to standardize

Back-office Information system

Interaction

IP Communication Gateway

Video surveillance

MMI

Driver screen

IP

Simulation

AVMS Func. block

FMS/IP bridge

Pre diagnosis

Ticketing

Database to standardize

Simulation FMS 2

Traffic light

Vehicle Sensors + localization system

CAN

EBSF IT Standard Platform

INTERNAL MODULARITY
TELEDIAGNOSTIC
DRIVER COMFORT

ROME

Calendar of EBSF events on
www.ebsf.eu

7 EBSF Use Cases
IT Platform workshop
Bus Stop presentation

ON-BOARD COMMUNICATION
INFORMATION TO PASSENGERS
INTEGRATED INFORMATION SERVICES (ex-PT)
SOLUTIONS FOR PASSENGERS COMFORT

BREMERHAVEN

MULTIMODAL INFORMATION FOR PASSENGERS AND DRIVERS
UNDERGROUND VEHICLE LOCALISATION
INFORMATION INTEGRATION IN THE CENTRAL-OFFICE

MADRID

ACCESSIBILITY
CENTRAL DRIVER POSITION
DWELL TIME TRAINING
SMART DRIVING

GOTHENBURG

TELEDIAGNOSTIC
PREDICTIVE MAINTENANCE
DEPOT MANAGEMENT

BRUNOY (Paris)

IMPROVED GUIDANCE AT PLATFORM
ACCESSIBILITY FOR USERS WITH SPECIAL NEEDS

ROUEN

ACCESSIBILITY
PASSENGER CONFORT
TELEDIAGNOSTIC
TRAFFIC MONITORING AND BUS PRIORITY

BUDAPEST

UITP

ASSTRA

SF – 2011 Annual Polis Conference and Polis An

EBSF Tree

System Approach

- Definition of European Bus System of the Future functionalities (*trunk*)
- Development of key solutions (*branches*)

EBSF: European Platform for Bus System Research

"EBSF Roadmap" identifies areas and priorities for future bus system research

How is the European Bus System of the Future?

Intelligent, Innovative, Integrated
The European Bus System of the Future is

An intelligent system...
- efficient use of information
- different bus system solutions adapted to specific needs of all stakeholders

...with innovative vehicles and infrastructures...
- providing improved comfort to drivers and passengers
- providing improved accessibility to all the users
- making smart use of energy

...integrated in the European urban scenarios
- adapted to different modern and historical city contexts
- taking into account the future mobility trends
- featuring new services for passengers and operators
- core part of the whole transport network for citizens seamless mobility

Thanks for Your Attention

More Information?

- Public Deliverables
- EBSF Vision
- EBSF Compendium: System Definition
- EBSF Use Cases
- EBSF Roadmap for ERTRAC

On EBSF website