



Real time information in public transport - City of Oulu

7.5.2007

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Public Transport Development

- ❑ **Public transport plan completed**
 - ❑ more effective shorter routes – work place connections as a priority
- ❑ **Employee benefits for city personnel**
 - ❑ 25 % discounts for serial and month cards
- ❑ **Real Time Information System OULA in use**
 - ❑ 1,3 M €
- ❑ **Dedicated street for public transport, completed 22.9. 2007**
 - ❑ more than 5 M €
- ❑ **City Transport (short trips close to city centre) start 22.9.2007**
 - ❑ 0,5 M €
- ❑ **new cheaper tickets in public transport**



Objectives

- **BETTER INFORMATION FOR PASSENGERS**
 - displays and monitors
 - other media and pda
 - realtime and timetable based information
 - connections to route guides, www.matka.fi www.linjakas.fi
- **FLUENT, FAST AND ACCURATE PUBLIC TRANSPORT**
 - priorities
 - ahead/behind information for the driver
- **DEVELOPMENT OF PUBLIC TRANSPORT**
 - statistics and monitoring
 - future planning

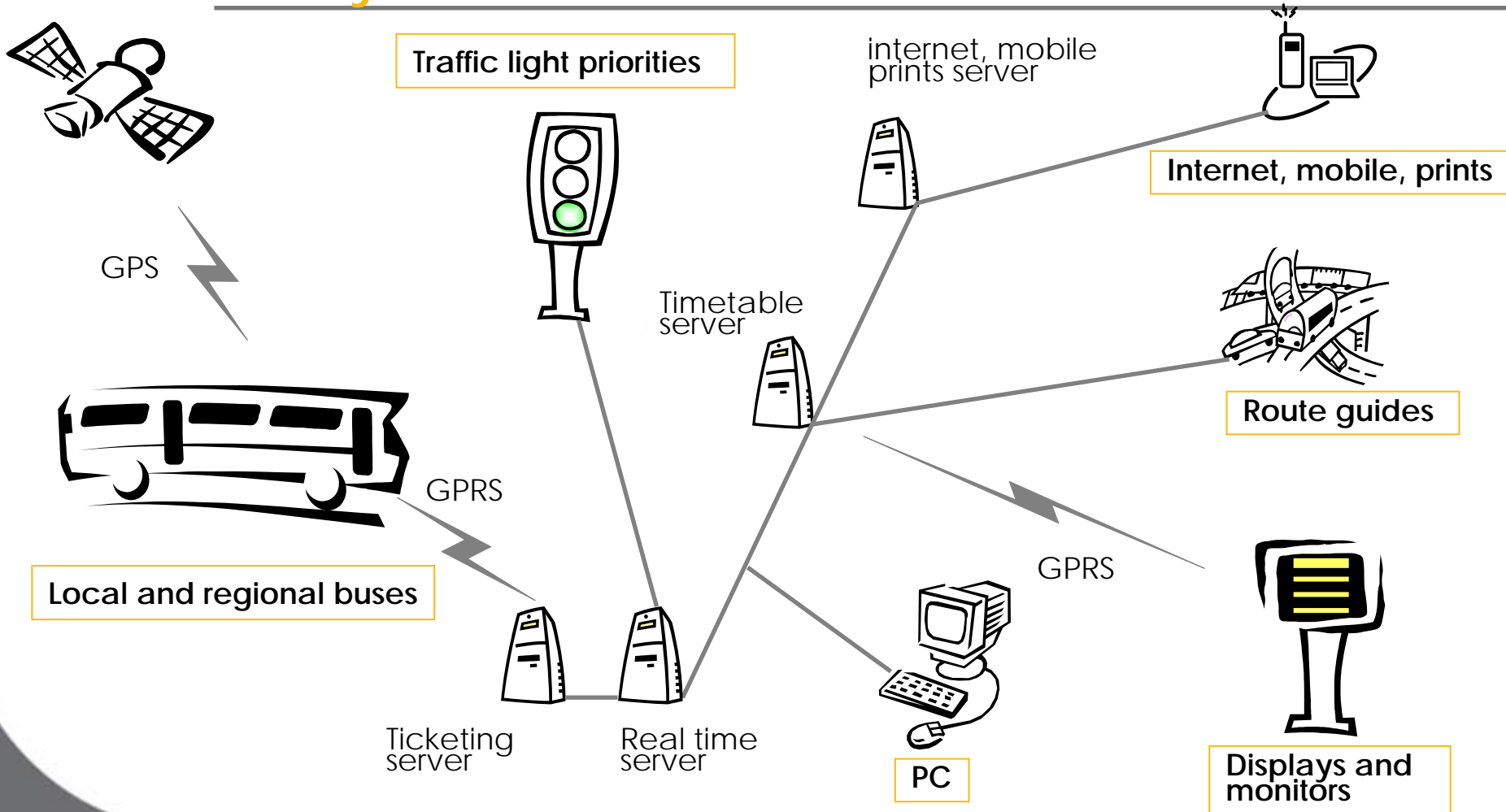


RTI project "OULA" in a nutshell

- both **realtime** and timetable based PT information
- with 12 **municipalities** in the region, 4 PT **operators**, ministry of transport and communications and Road administration
- **140** buses, **22** displays at bus stops, **20** traffic light junctions
- **2000** bus stops
- **internet, mobile** and other services
- **traffic light priorities** for buses that are late, automatically via traffic light centre
- Utilizes the existing ticketing computer and display (in the bus)
- emergency button for drivers in case of severe disorder
- GPS to follow the location of the buses, odometer backup
- Wireless bus data transfer into the server (GPRS)



RTIP system





OYS N1

11:12

LINJA	MÄÄRÄNPÄÄ	AIKA
17	Svaaninkuja P	11:20
20	Kotkantie pp	11:22
13	Hätälä P	11:32
20	Kotkantie pp	11:52
13	Hätälä P	12:02
17	Svaaninkuja P	12:20

*** PYSÄKKIAIKATAULUT
TESTIKÄYTTÖSSÄ ***



Displays and monitors

- Busiest stops, transfer stops
- Additional displays and monitors easily adopted





Traffic light priorities

- Bus running late automatically receives priority
- 20 junctions first, gradually extending to all main routes
- Data transfer directly to traffic light equipment from traffic light centre
- Request for green light before junction
- Bus reply after bus has crossed traffic light
- extended green, earlier green, extra phase and shorter cycle time



Otto Karhi

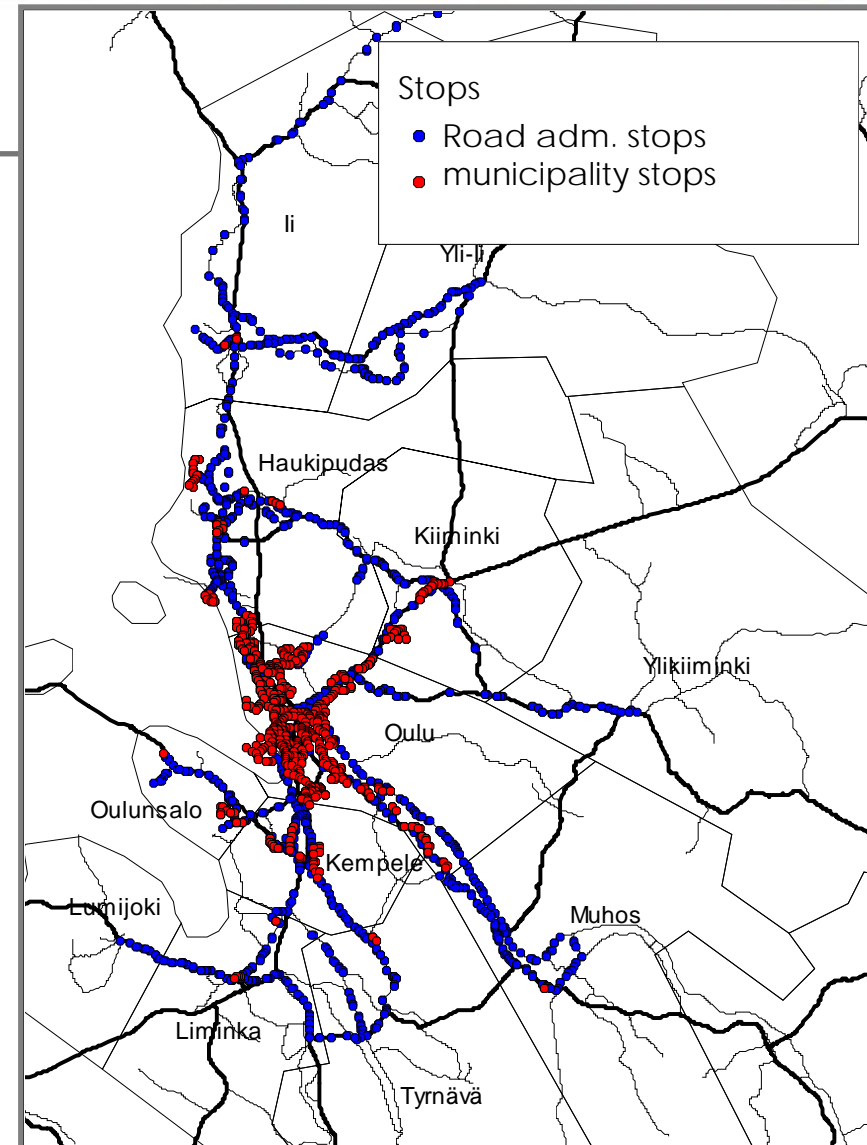
11:08

Linja	Määränpää	Pysäkki	Aika
9	Heikinharju	Otto karhi P	
11	Puolivälinkangas	Otto karhi P	
12	Koskela	Otto karhi P	6 min
8	Kiiminki	Otto karhi P	9 min
14	Välivainio	Otto karhi P	10 min
19	Linnanmaa	Otto karhi P	14 min
1	Kiviniemi	Otto karhi P	14 min
13	Puolivälikangas	Otto karhi P	15 min
6	Kuivasjärvi	Otto karhi P	16 min
20	Häyryseniemi	Otto karhi P	19 min



All bus stops

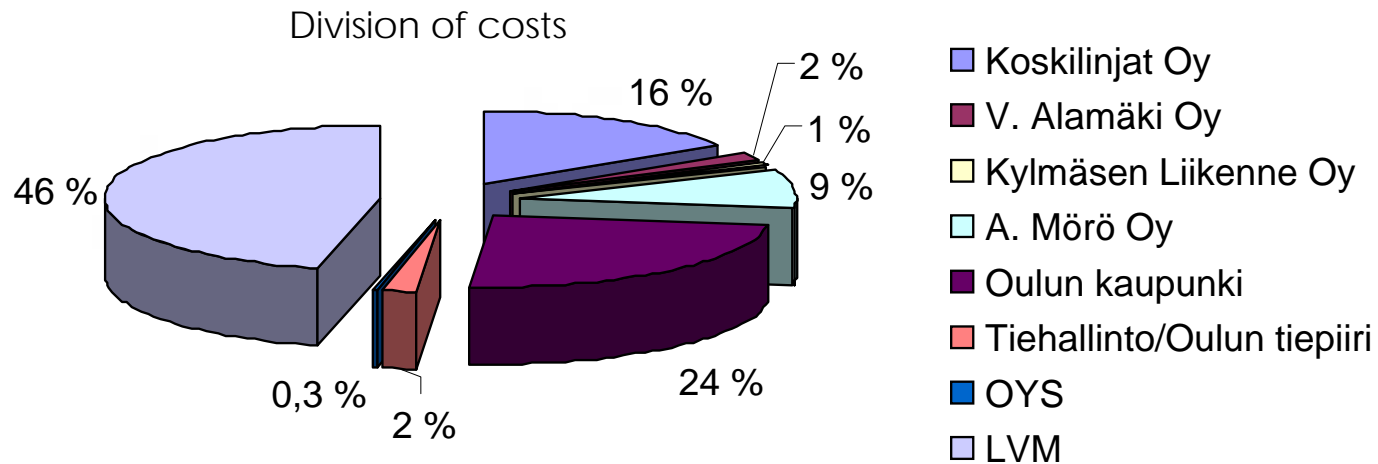
Municipality	Stops per municipality	Stops per Road adm.
Haukipudas	48	202
li	5	158
Kempele	44	91
Kiiminki	48	87
Liminka	0	86
Lumijoki	0	15
Muhos	1	109
Oulu	639	216
Oulunsalo	16	58
Tyrnävä	3	64
Yli-li	0	82
Ylikiiminki	0	35
Altogether	804	1 203





Costs

- Investment costs about 1 300 000 €
- State support funding ca. 46 %



- Maintenance costs ca. 45 000 €/year



Timetable and implementation

- planning 2002-2003
- tendering process autumn 2003
- implementation 2004-2006
 - displays and monitors showing timetables 5/2005
 - real time information autumn 2006
 - traffic light priorities 5/2007
 - official opening 6/2007
- Provider was purchased by another company
 - positive: better and user friendly solution
 - negative: timetable late year and a half and the project more complex
 - WWW.OULA.FI



Cooperation companies and authorities

Authorities

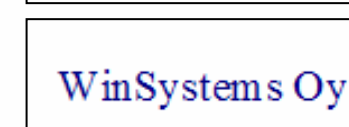


Municipalities

operators



equipment and applications



Infokartta Oy



What next?

- extension of traffic light priorities
- RFID to bus stops, quick information
- wireless WLAN into buses
- monitors and displays to public and private buildings
- monitoring and development of the system and transport operations