Travel Times : An Added Value Information Service

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3. The implemented solution
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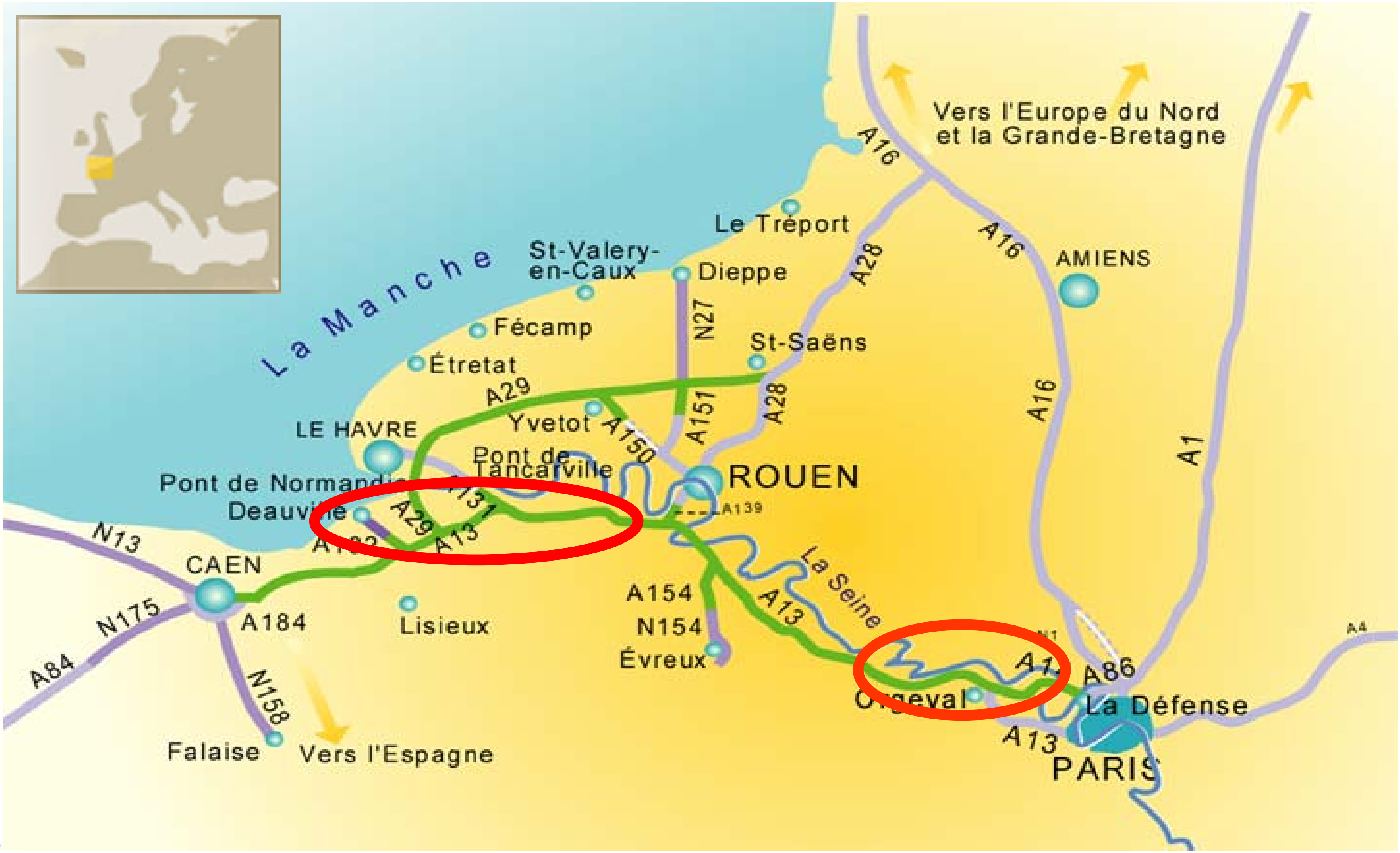
6. Conclusion / Video

Context

- **The French motorway company SAPN**
  - **367 km motorway network**
  - **high traffic volumes (traffic volume A13 › 40 000, pic over › 100 000 near Poissy)**
  - **weekend destinations : Deauville, Honfleur, … from Easter to october.**
  - **regular traffic jams on Sunday evenings**

Context (2)


Vers l'Europe du Nord
et la Grande-Bretagne
La Manche
Le Tréport
St-Valery-
en-Caux
Dieppe
AMIENS
Fécamp
Étretat
St-Saëns
A29
Yvetot
A150
A151
N27
A28
A16
A1
LE HAVRE
Pont de
Tancarville
ROUEN
A139
Pont de Normandie
Deauville
A131
A29
A13
N13
CAEN
A184
N175
A84
Lisieux
A154
N154
Évreux
La Seine
A13
Orgeval
A14
A86
La Défense
A13
PARIS
A4
N158
Falaise
Vers l'Espagne

Context (3)

Travel Times

- a popular concept – reliability of time
- knowledge of travel times :
  - reduced stress = increased road safety
  - user-friendly information
- For the Paris area users = accustomed to travel time information on key routes around Paris

Calculating Travel Times

- **Existing methods :**
  - **Theoretical approach to calculate travel times by modelling “inflow” and “outflow“**
  - **Methods based on field data: flow, speed, occupancy**
  - **Floating vehicle data (typically positioned through GPS)**
  - **Etc.**

The approach adopted by SAPN

- **Based on field data, is composed of 3 steps :**
  - **Spot speed measurements at discrete points on motorways, transmitted back to central server**
  - **Calculation of travel times**
  - **Dissemination via appropriate media**

The Implemented Solution

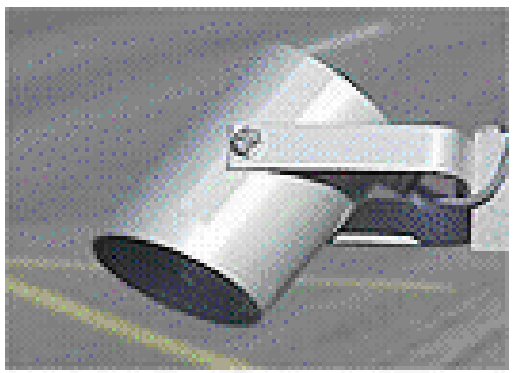
Motorway monitoring equipment

- 1st generation of detectors (93/94): electromagnetic loops including in the road surface, linked by wired network
  - Advantages : accuracy
  - drawbacks : “heavy” solution (work to create wired network, high costs of installation, fragility of detectors (during roadway maintenance)

The Implemented Solution

Motorway Monitoring Equipment (2)

- **2nd generation (2001/2004) : infrared detectors above the laneway, GSM / GPRS communication and solar / wind power**
  - **Advantages : acceptable accuracy and reliability, autonomy, lower cost**
  - **Drawbacks : you need a bridge ! (or gantry)**

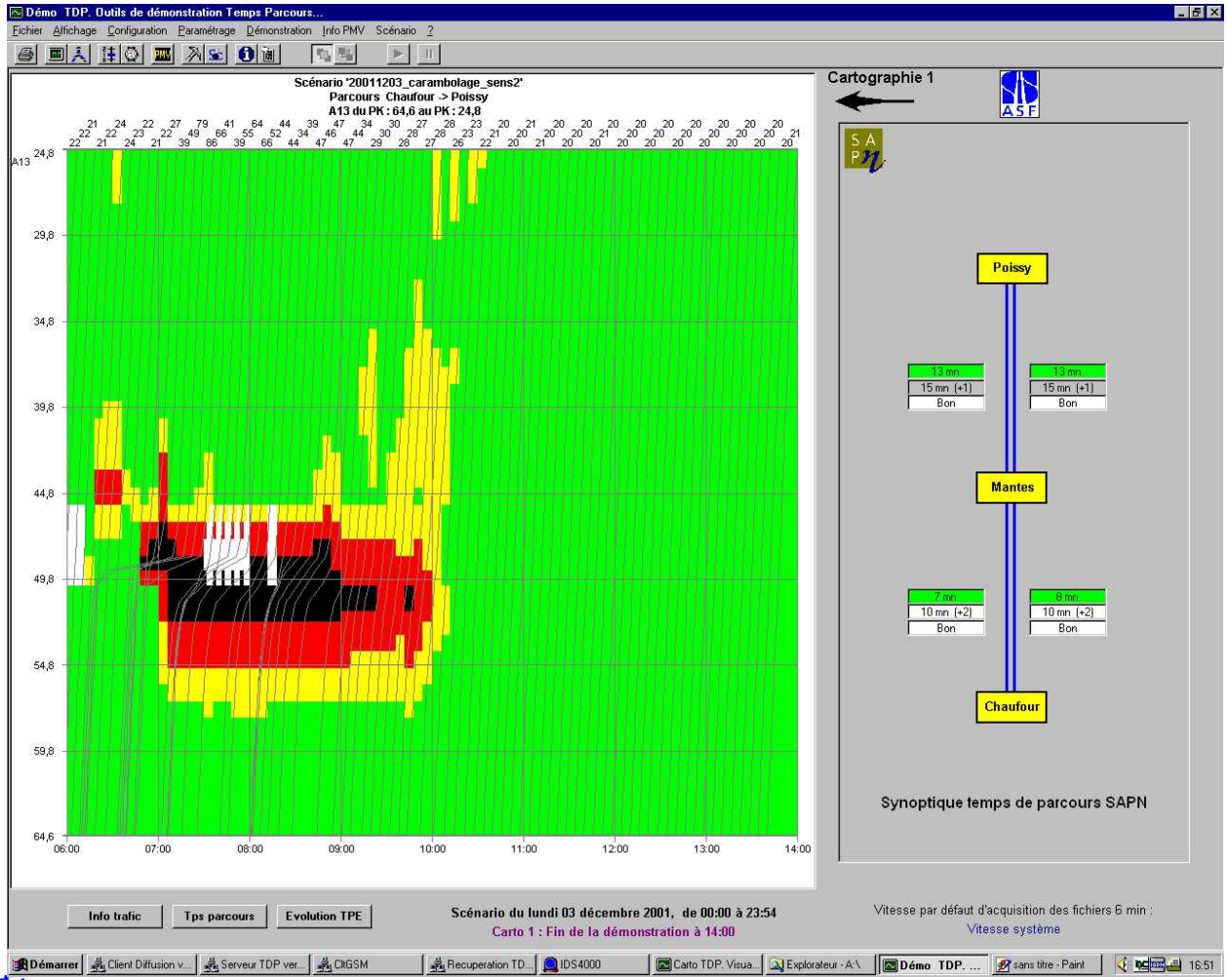


The Implemented Solution

Travel Time Calculation Server

- Based on proven tool used by ASF on the A7,
- Developed and configured for needs of SAPN,
- Estimated travel times using a linear multiple regression model , incorporating flow, speed and occupancy data
- Every 6 minutes, it recalculates :
  - a map of traffic conditions,
  - estimated travel times between cities or from VMS locations

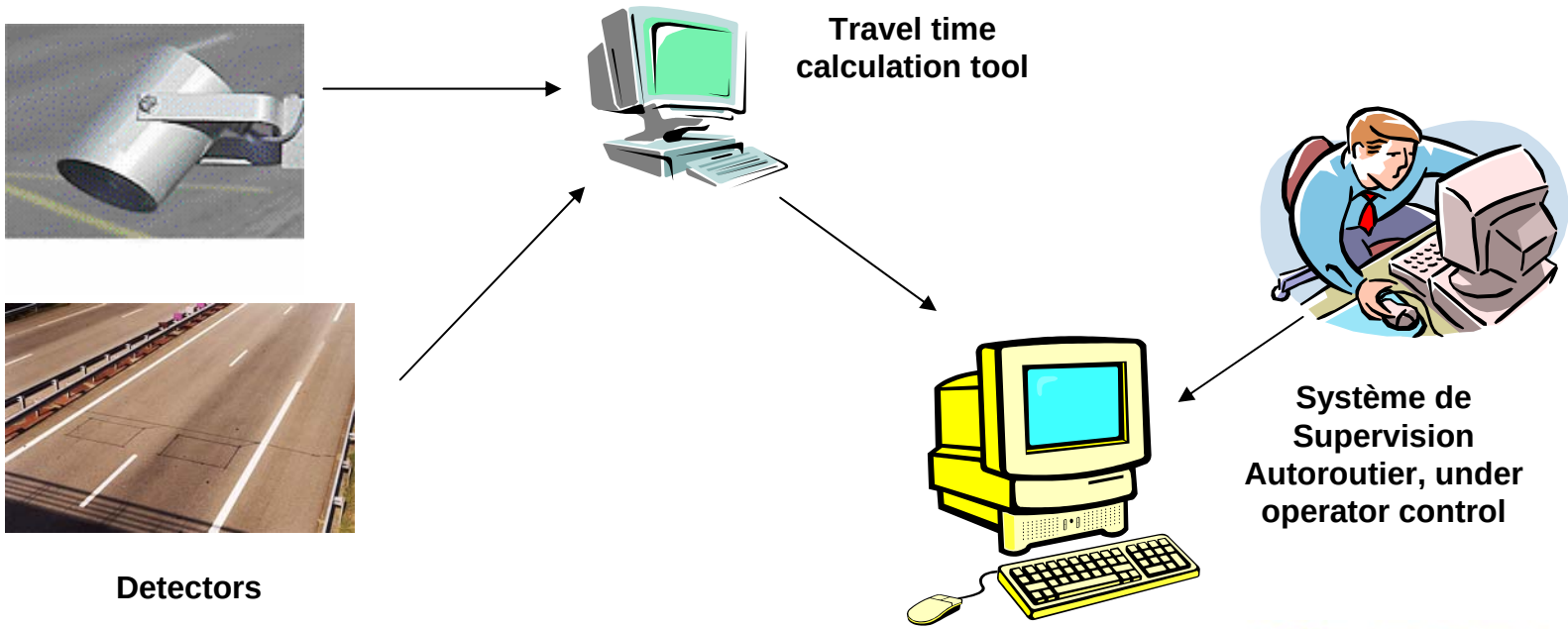
The Implemented Solution
Travel Time Calculation Tool (2)



Société des Autoroutes Paris - Normandie

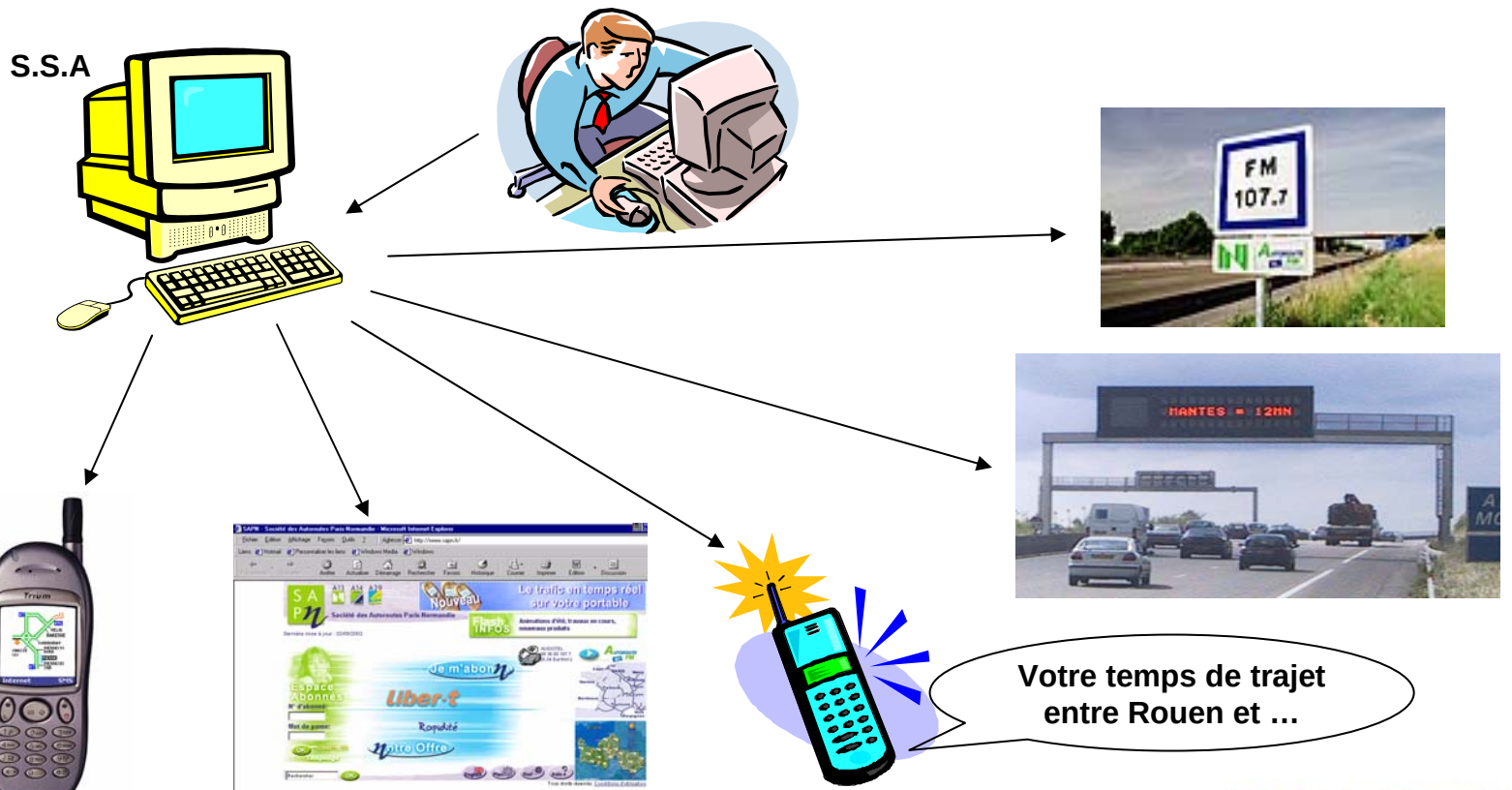
The Implemented Solution
Automatic Dissemination

Estimated travel times are disseminated to SAPN's « Système de Supervision Autoroutier » (S.S.A.)



The Implemented Solution
Automatic Dissemination (2)

Diffusion of travel times via various dissemination media



An Information Dissemination Strategy

- **An added value service, to supplement safety information**

- **A modular solution, based on user needs :**
  - **Travel times between major origins and destinations = VMS and Radio 107.7**

  - **Personalised travel times « à la carte », easily accessible from => Service Vocal Interactif (IVR)**

A new service : interactive voice response

SAPN's IVR is the first such system developed for traffic and motorway travel time dissemination.

- **Accessible from either land line or mobile telephones,**
- **Uses Interactive Voice Recognition technology,**
- **available 24/7 on 0892 00 1234, a shared revenue number**

Conclusion

SAPN has developed innovative tools and approaches that could be exploited by other road operators, to provide estimated travel times to drivers elsewhere in France and across Europe !

FILM