

Programmables Overlay Network

Didier Parigot



www-sop.inria.fr/members/Didier.Parigot/pon

Didier.Parigot@inria.fr

Demonstration of an application of
Publication and Registration of
geo referenced services
developped
with the PON software

Programmable Overlay Network



Peer-to-Peer Network of offers and demands service georeferenced

The network's aim is to

offer a dynamic and decentralized architecture to facilitate the relationship between offers and requests service georeferenced

The actors of network are

service providers which publish services

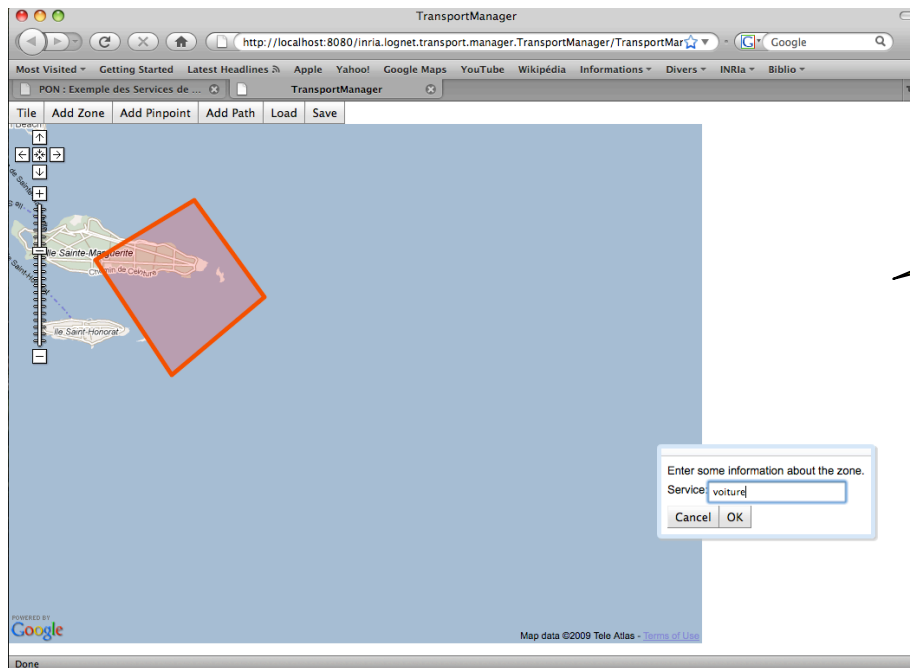
clients who seek and subscribe to these services

The solution relies

for execution on a Service Oriented Architecture

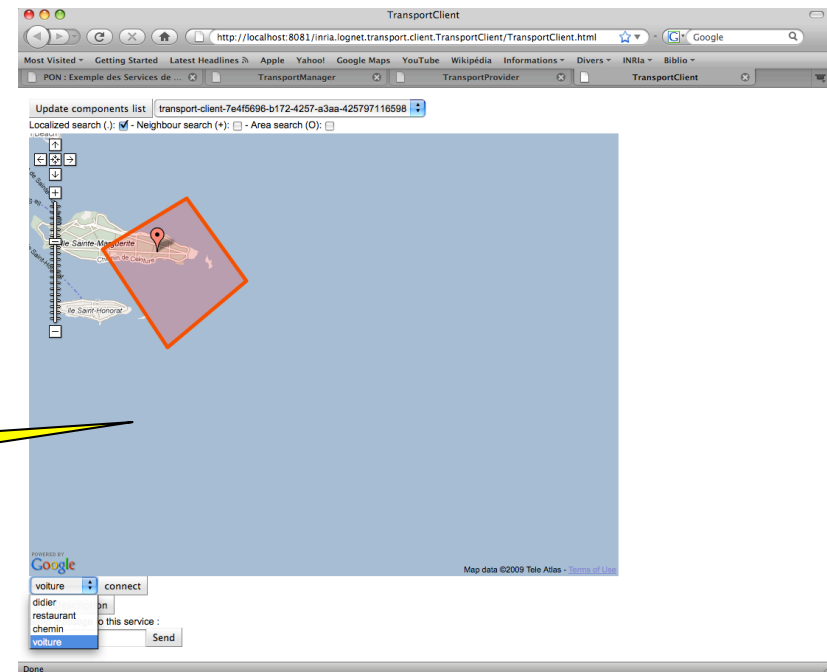
for organization and storage on an Overlay Network (as Chord)

Web Interface for Provider and Client

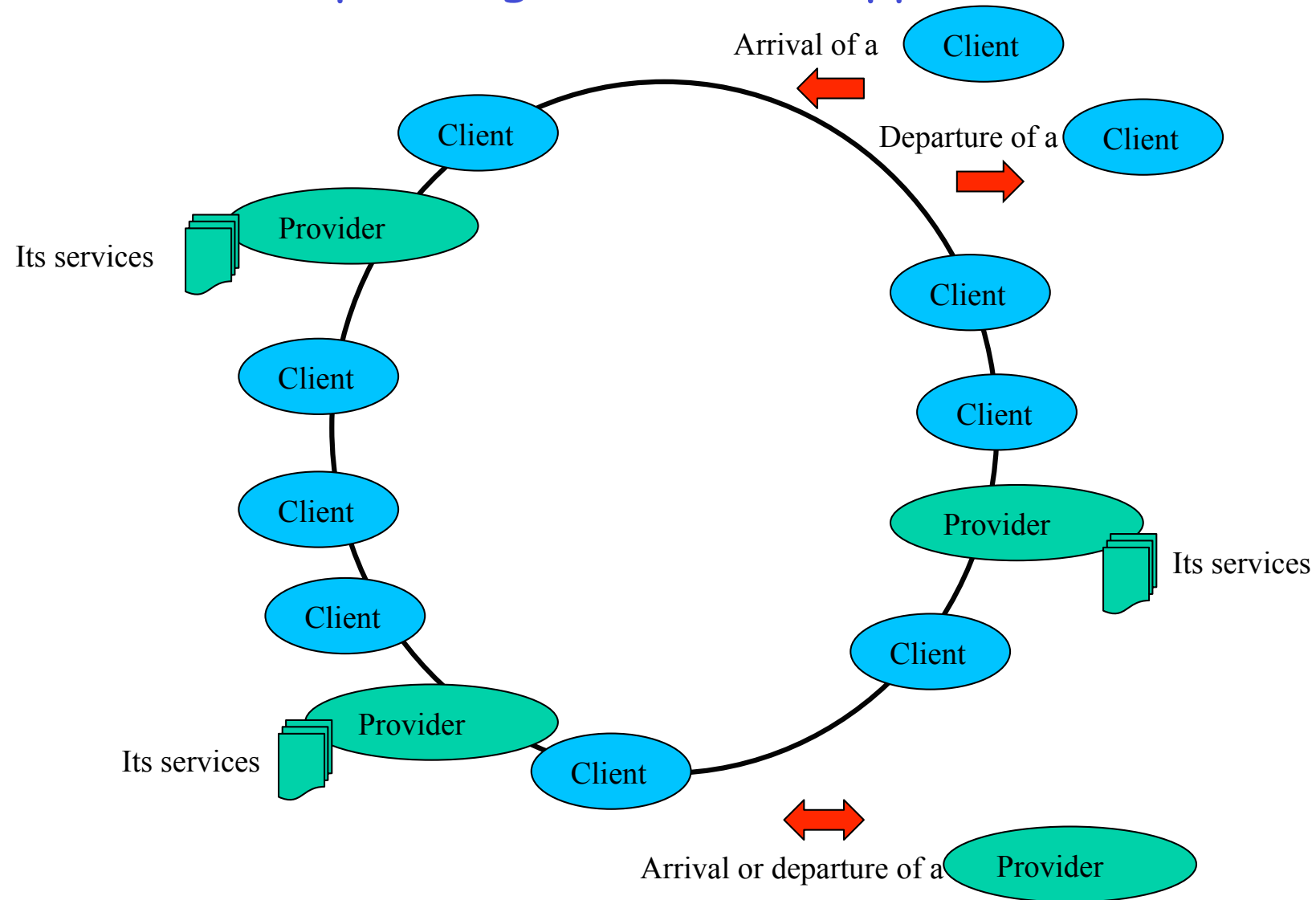


Provider

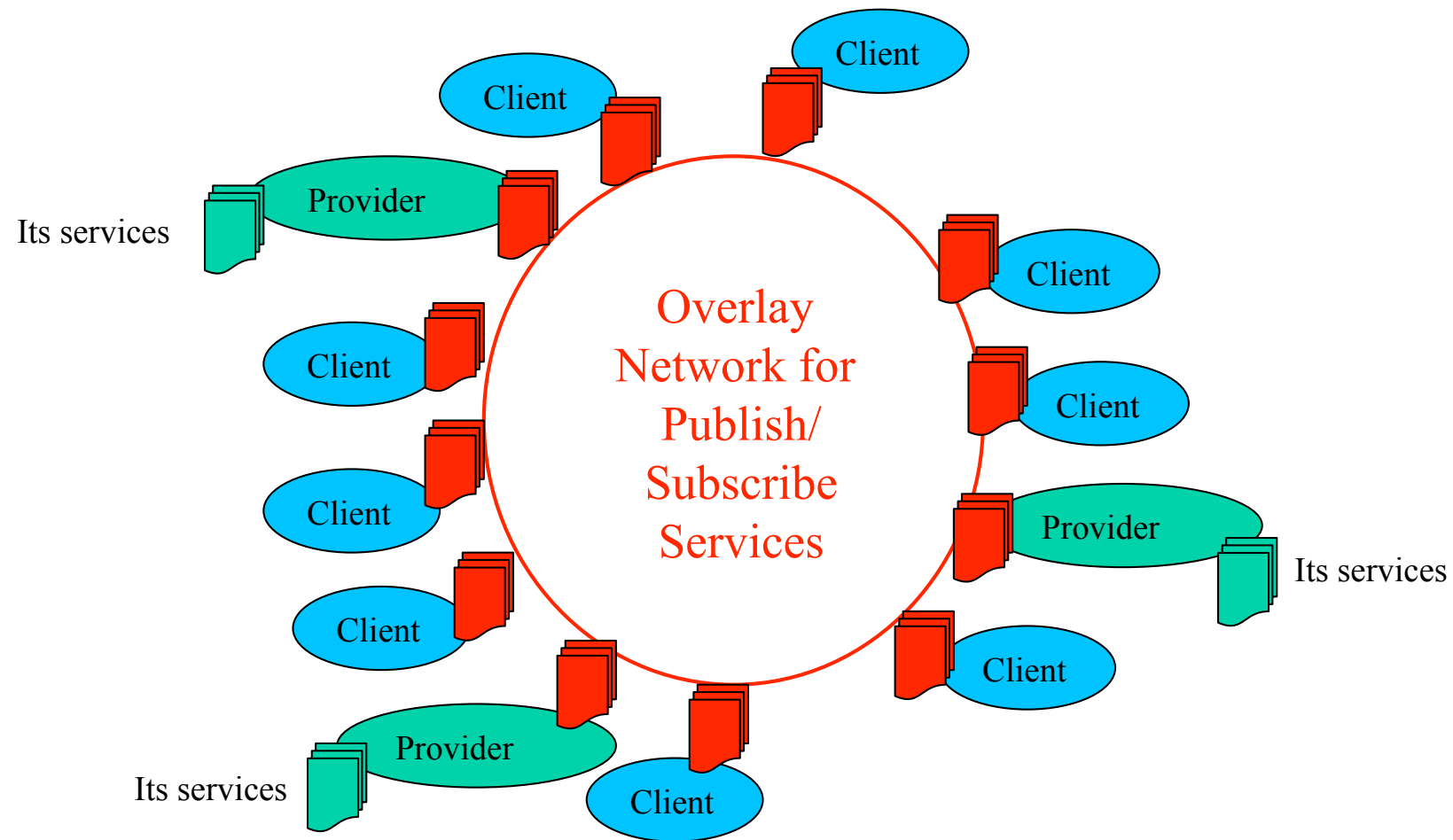
Client



Open Organisation of application



Publish and Subscribe Service on P2P Overlay Network



Download application

On gforge.inria at this URL

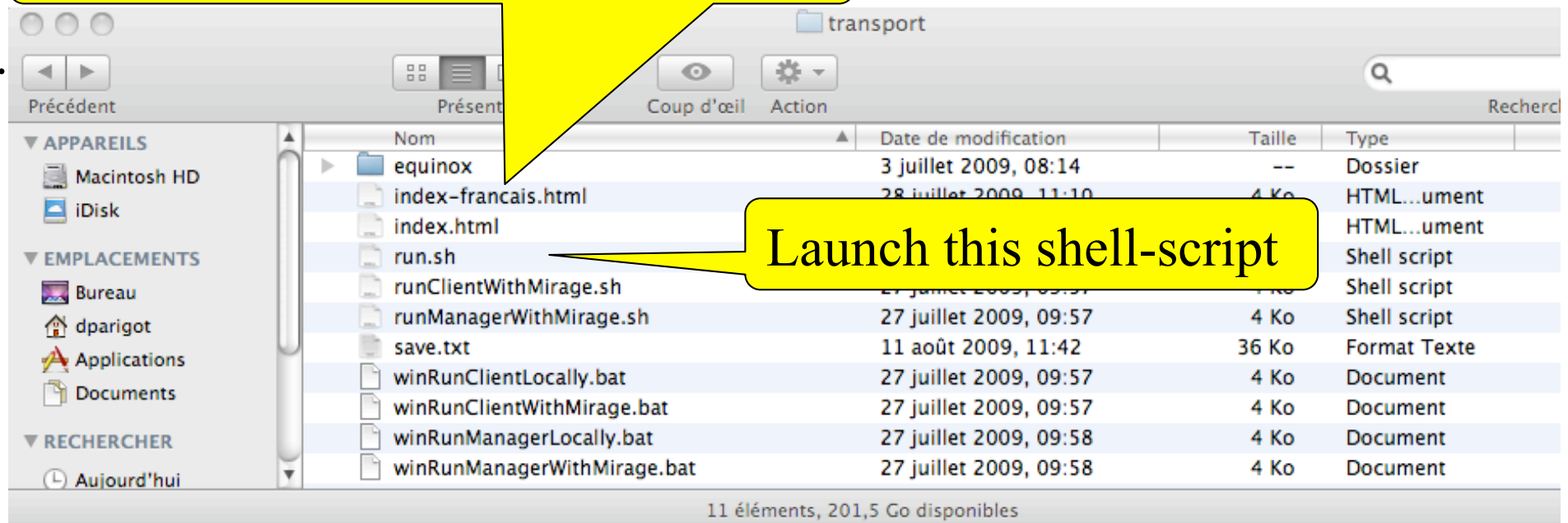
<http://gforge.inria.fr/frs/download.php/22767/transport-1.3.zip>

Project Name	File Name	Size	Downloads	Format	Date
1.0.0	pinet-src.jar	15 KB	112 Any	Other Source File	2008-07-02 14:42
PON Examples	transport-1.3	5.27 MB	2 Any	.zip	2009-08-14 15:13
	chat-1.1	4.29 MB	0 Any	.zip	2009-07-23 14:00
Programmable Overlay Network	pon-1.6.2	846 KB	0 Any	.zip	2009-07-22 16:09
	pon-1.6.1	843 KB	0 Any	.zip	2009-07-10 14:18
	pon-1.6.1				2008-10-22 00:24

Install and running

Transport folder

Open this page into your browser



Lancement de l'application

```
Terminal — xterm — 73x10
pon:~ dparigot$ pwd
/Users/dparigot
pon:~ dparigot$ cd Desktop/transport/
pon:transport dparigot$ pwd
/Users/dparigot/Desktop/transport
pon:transport dparigot$ . run.sh
-bash: .: filename argument required
.: usage: . filename [arguments]
pon:plugins dparigot$
```

Launch one client and one provider

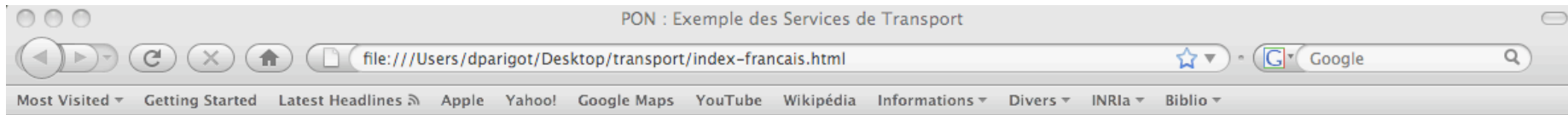
```
java -Dosgi.bundles=org.eclipse.osgi.services,org.eclipse.osgi
manager)) enter in communication with <ComponentsManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : connectTo to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : exit to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Connecting output : disconnect to ComponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Local DS] newConnexion ComponentsMa
nager -> transport-manager
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] Updating connection with <transport-manager(transport-manager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : quit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : disconnect
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] Updating connection with <ComponentsManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : connectTo
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : exit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-manager(transport-
manager)] UpdateConnect : Connecting output : disconnect
```

Provider

```
java -Dosgi.bundles=org.eclipse.osgi.services,org.eclipse.osgi
2b-41bf-8e3c-976ff506fcd6(transport-client)] Connecting output : disconnect to C
omponentsManager(componentsManager)
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Local DS] newConnexion ComponentsMa
nager -> transport-client-9f7dc7a1-742b-41bf-8e3c-976ff506fcd6
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] Updating connection with <transport-client-9f7dc7a1-742b-41bf-8e3c-976
ff506fcd6(transport-client)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : quit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [ComponentsManager(components
Manager)] UpdateConnect : Connecting output : disconnect
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] Updating connection with <Component
sManager(componentsManager)>
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
connectTo
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
exit
* Mon Sep 14 10:25:01 CEST 2009 [SmartTools Core] [transport-client-9f7dc7a1-74
2b-41bf-8e3c-976ff506fcd6(transport-client)] UpdateConnect : Connecting output :
disconnect
```

Client

Ouverture des interfaces Web



PON : Exemple des Services de Transport

Exécuter l'exemple

Ouvrez un terminal et lancez le script run.sh (linux). Deux xterm s'ouvrent et exécutent deux plateformes PON en parallèle.

Chacun de ces plateformes ont lancé un composant permettant de démarrer des composants transport-provider. Dans votre navigateur, ouvrez les trois URLs dans des onglets différents : [Transport Manager](#), [Transport Provider](#) et [Transport Client](#).

Transport Manager

Dans TransportManager, cliquez sur Add Zone.

Entrez un polygone, et lorsque vous avez fini, cliquez sur End A

Un pop up apparait pour entrer le nom du composant qui se

Open TransportManager page

TransportProvider

Le composant hello créé est de type transport-provider. Dans l'onglet TransportProvider, faites un Refresh de la liste de composant et hello devrait apparaitre.

Hello est normalement sélectionné, saisissez une description dans le composant, par exemple "Hello World", puis cliquez sur setDescription.

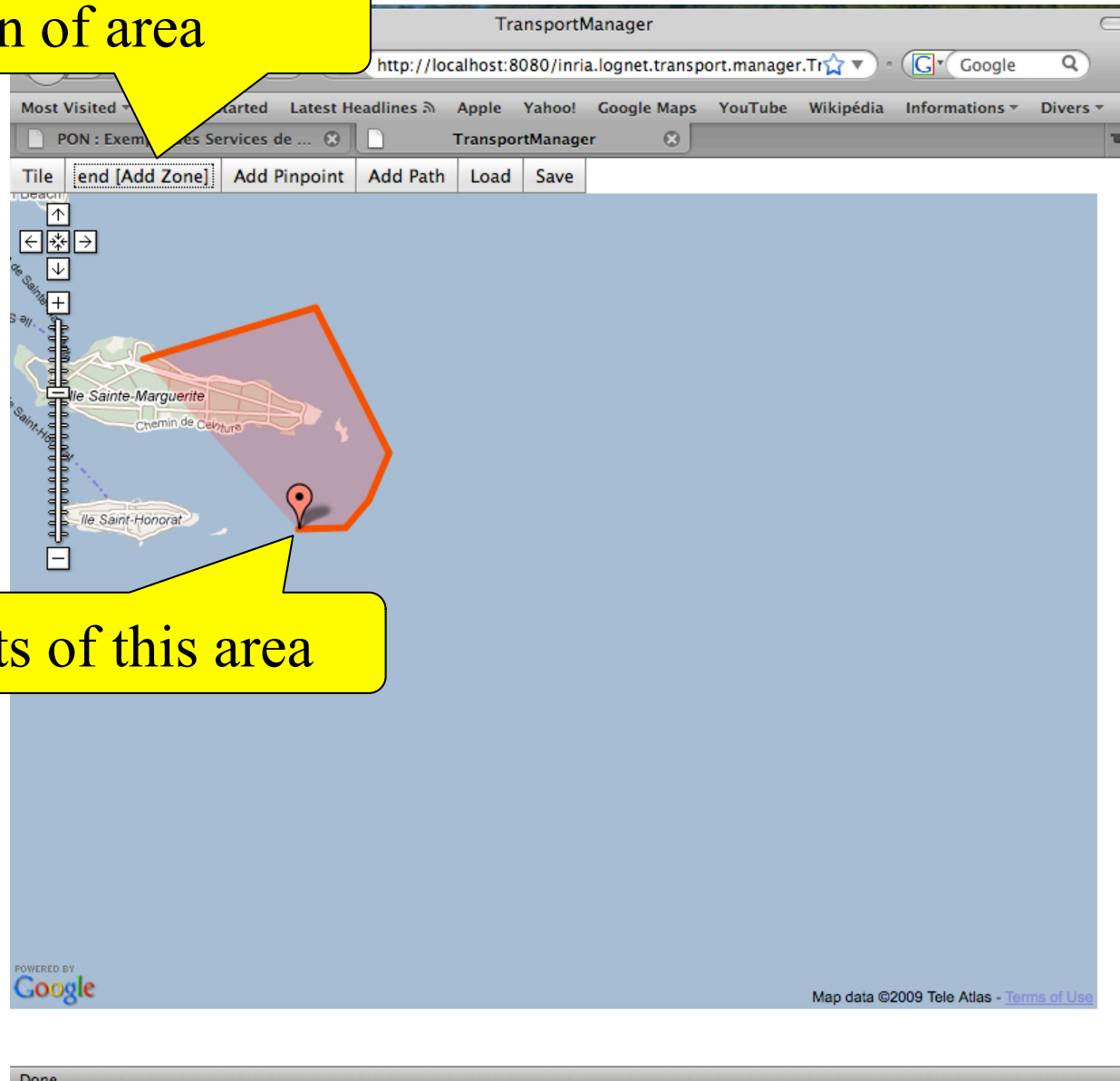
TransportClient

TransportClient tourne sur une autre JVM et ne connait pas les services proches de sa position. Cliquez sur la carte, où le polygone que vous avez saisi est défini.

Creating of a service

Definition of area

Set points of this area



Creating and publishing service

The screenshot shows the TransportManager web application interface. The browser address bar displays `http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportMar`. The application has a menu bar with options: Tile, Add Zone, Add Pinpoint, Add Path, Load, and Save. A map of the Île de la Réunion is shown, with a red polygon highlighting a specific area. A yellow callout box points to this area with the text "Creating a defined service by area". A dialog box is open, titled "Enter some information about the zone.", with a "Service:" label and a text input field containing "voiture". A yellow callout box points to this input field with the text "Give a name of this service". The dialog box has "Cancel" and "OK" buttons. A yellow callout box points to the "OK" button with the text "Validated". The map is powered by Google, and the footer indicates "Map data ©2009 Tele Atlas - Terms of Use".

TransportManager

http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportMar

Most Visited Getting Started Latest Headlines Apple Yahoo! Google Maps YouTube Wikipédia Informations Divers INRIA Biblio

PON : Exemple des Services de ... TransportManager

Tile Add Zone Add Pinpoint Add Path Load Save

Creating a defined service by area

Give a name of this service

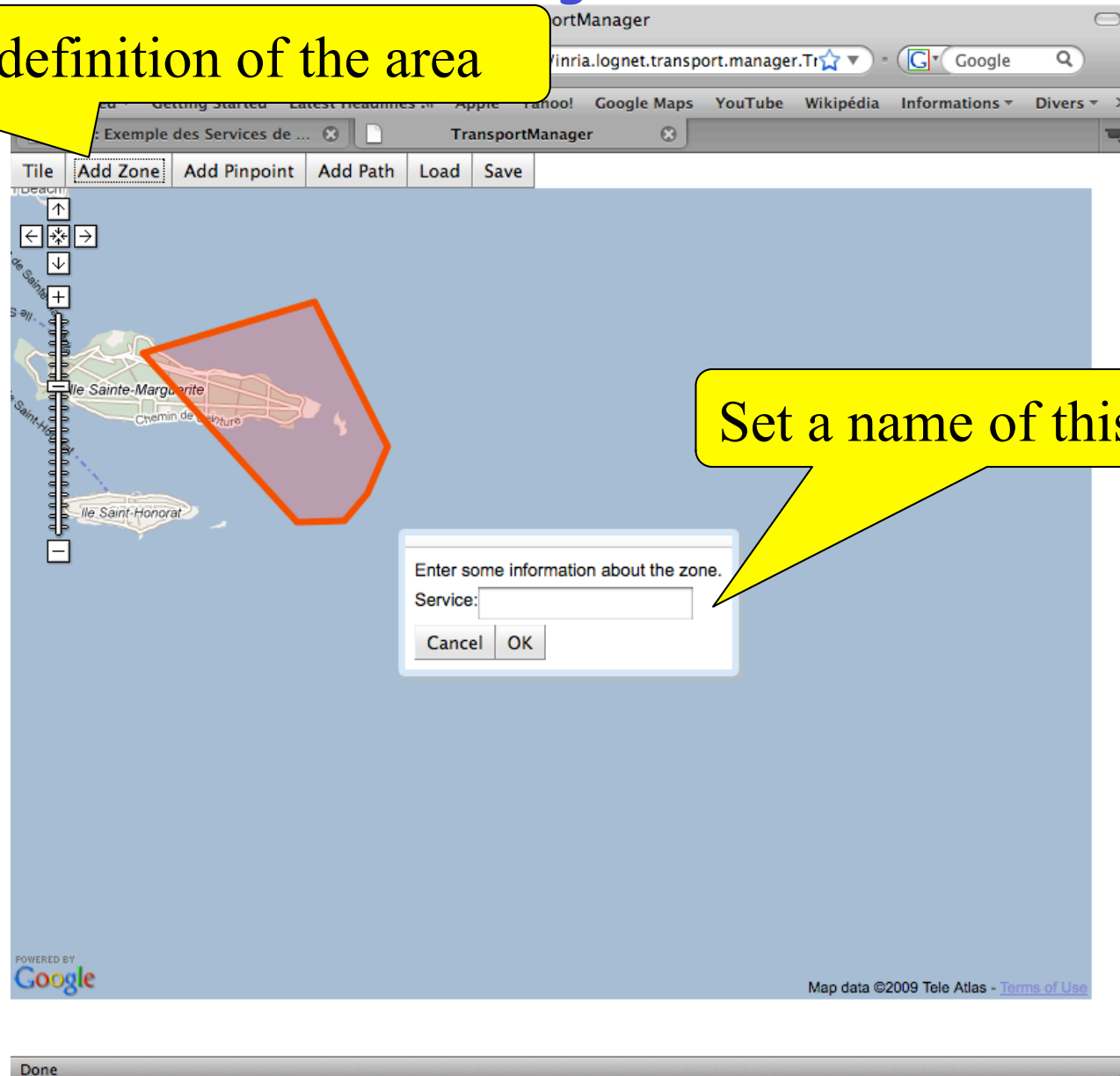
Enter some information about the zone.
Service: voiture
Cancel OK

Validated

Done

Creating of a service

End the definition of the area



Set a name of this service

Creating and publishing of a service

The screenshot shows a web browser window titled 'TransportManager' with the URL <http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html>. The browser's address bar and search bar are visible. Below the browser window, a map of the Côte d'Azur region is displayed, showing the coastline and several islands, including Ile Sainte-Marguerite and Ile Saint-Honorat. A red pinpoint is placed on the map. A yellow callout box points to the 'Add Pinpoint' button in the top menu bar, with the text 'Creating of a service defined by a point'. Another yellow callout box points to a dialog box that appears over the map, containing the text 'Enter some information about the pinpoint.' and a text input field with the word 'restaurant' entered. Below the input field are 'Cancel' and 'OK' buttons. A third yellow callout box points to the 'OK' button with the text 'Validated'. A fourth yellow callout box points to the dialog box with the text 'Give a name of this service'. The bottom of the browser window shows a 'Done' button.

TransportManager

<http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html>

Most Visited Getting Started Latest Headlines Apple Yahoo! Google Maps YouTube Wikipédia Informations Divers INRIA Biblio

PON : Exemple des Services de ... TransportManager

Tile Add Zone Add Pinpoint Add Path Load Save

Creating of a service defined by a point

Give a name of this service

Enter some information about the pinpoint.
Service: restaurant
Cancel OK

Validated

Done

Publishing of a service

The screenshot shows the TransportManager web application interface. The browser address bar displays `http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html`. The application has a menu bar with options: Tile, Add Zone, Add Pinpoint, Add Path, Load, and Save. A map of the Île de la Réunion is visible, with a green path highlighted on Ile Sainte-Marguerite. A yellow callout box points to the 'Add Path' menu item with the text 'Creation of a service defined by a path'. Below the map, a dialog box titled 'Enter some information about the path.' is open, showing 'Service: chemin' in the input field. A yellow callout box points to the 'Service' input field with the text 'Give a name of this service'. Another yellow callout box points to the 'OK' button with the text 'Validated'. The dialog box has 'Cancel' and 'OK' buttons. The bottom of the interface shows 'POWERED BY Google' and 'Map data ©2009 Tele Atlas - Terms of Use'. A 'Done' button is visible at the bottom left of the application window.

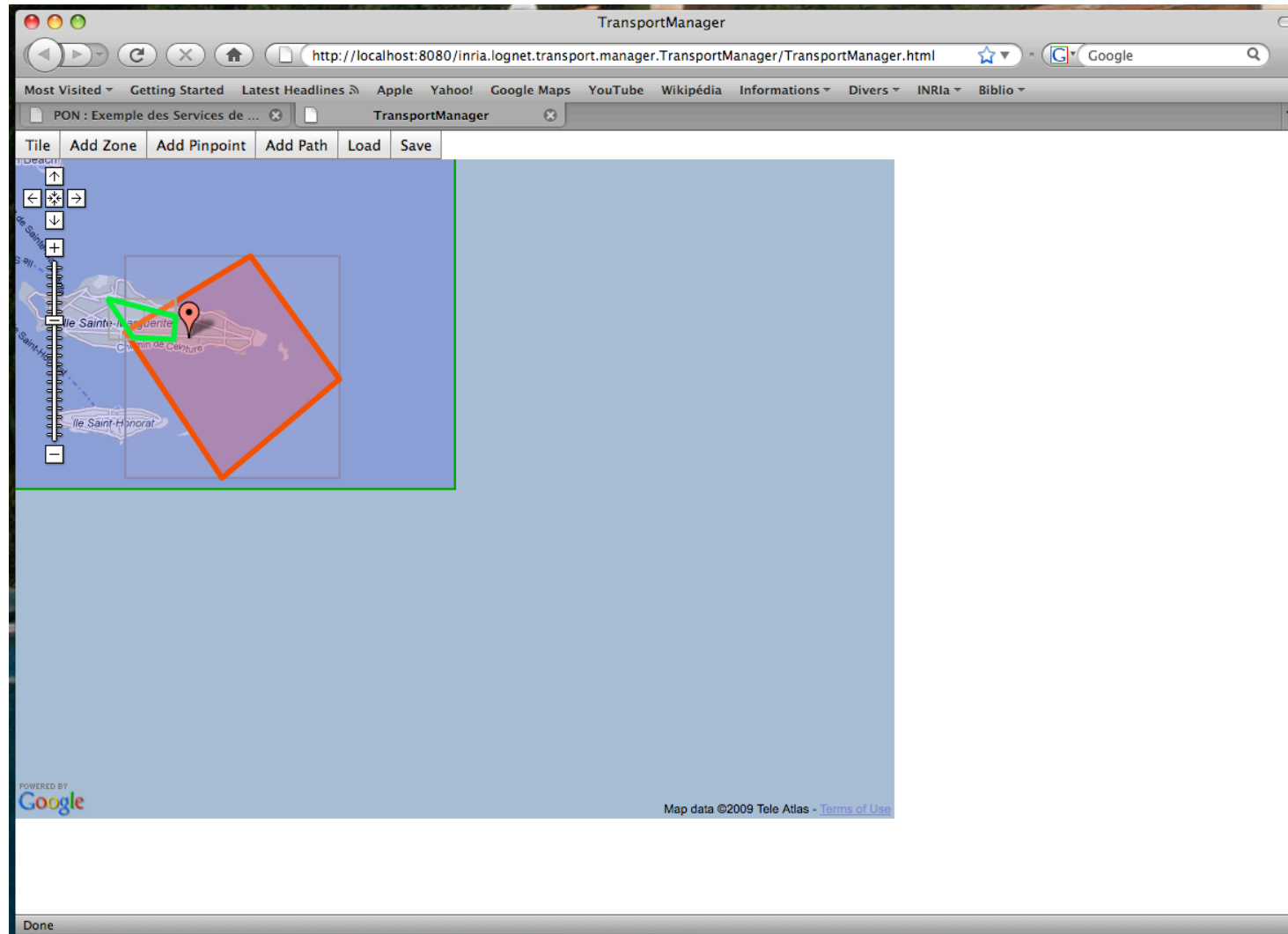
Creation of a service defined by a path

Give a name of this service

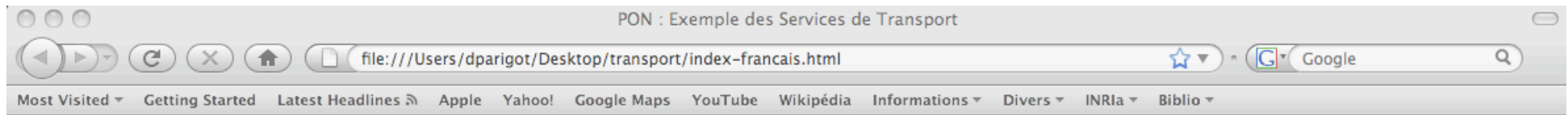
Validated

Publishing of services

Services set



Managing of meta-information of services



PON : Exemple des Services de Transport

Exécuter l'exemple

Ouvrez un terminal et lancez le script run.sh (linux). Deux xterm s'ouvrent et exécutent deux plateformes PON en parallèle.

Chacun de ces plateformes ont lancé un composant permettant de démarrer des composants transport-provider. Dans votre navigateur, ouvrez les trois URLs dans des onglets différents : [Transport Manager](#), [Transport Provider](#) et [Transport Client](#).

Transport Manager

Dans TransportManager, cliquez sur Add Zone.

Entrez un polygone, et lorsque vous avez fini, cliquez sur End Add Zone.

Un pop up apparait pour entrer le nom du composant qui sera

Open Transport Provider page

TransportProvider

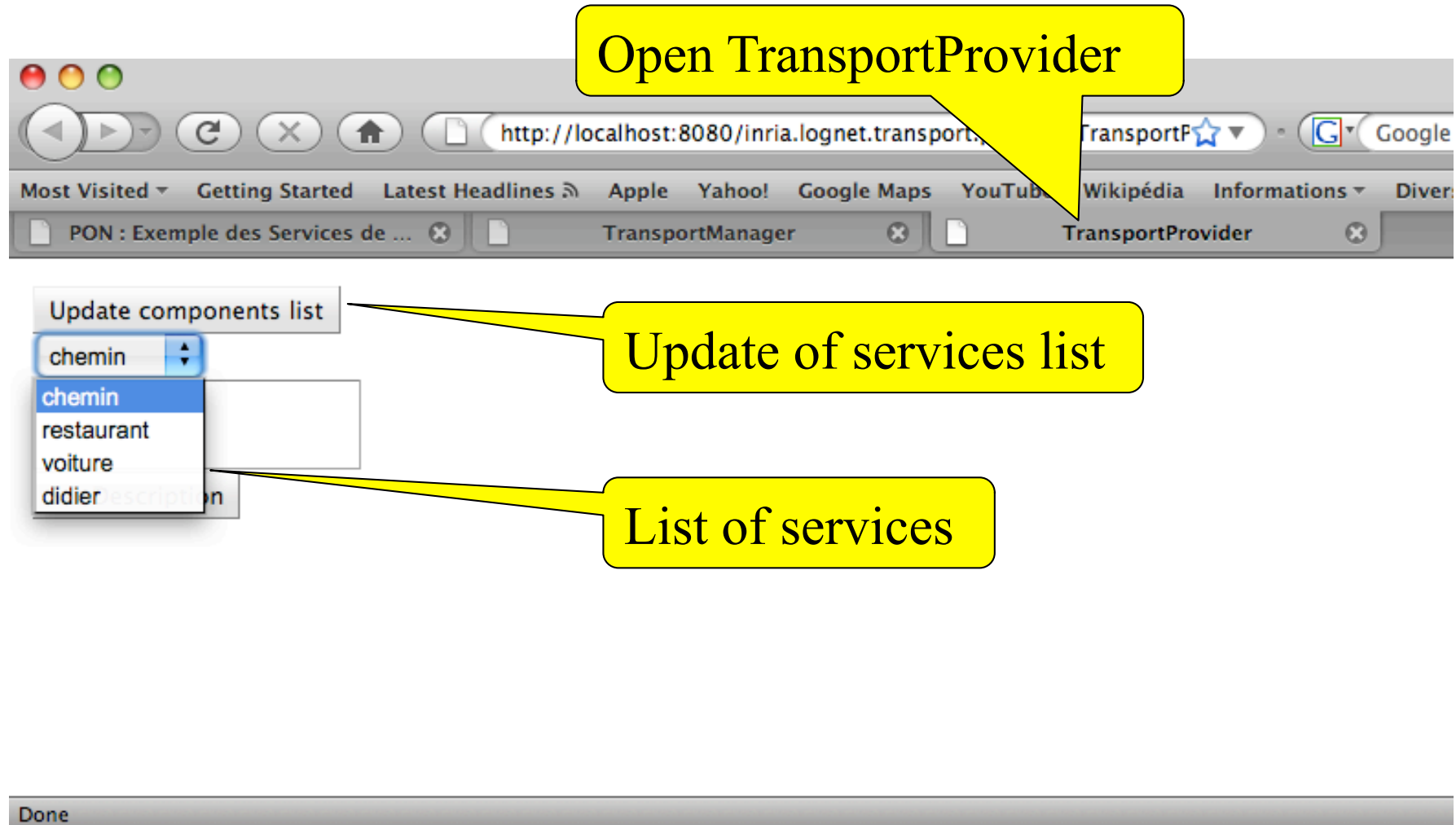
Le composant hello créé est de type transport-provider. Dans l'onglet TransportProvider, faites un Refresh de la liste de composant et hello devrait apparaitre.

Hello est normalement sélectionné, saisissez une description dans le composant, par exemple "Hello World", puis cliquez sur setDescription.

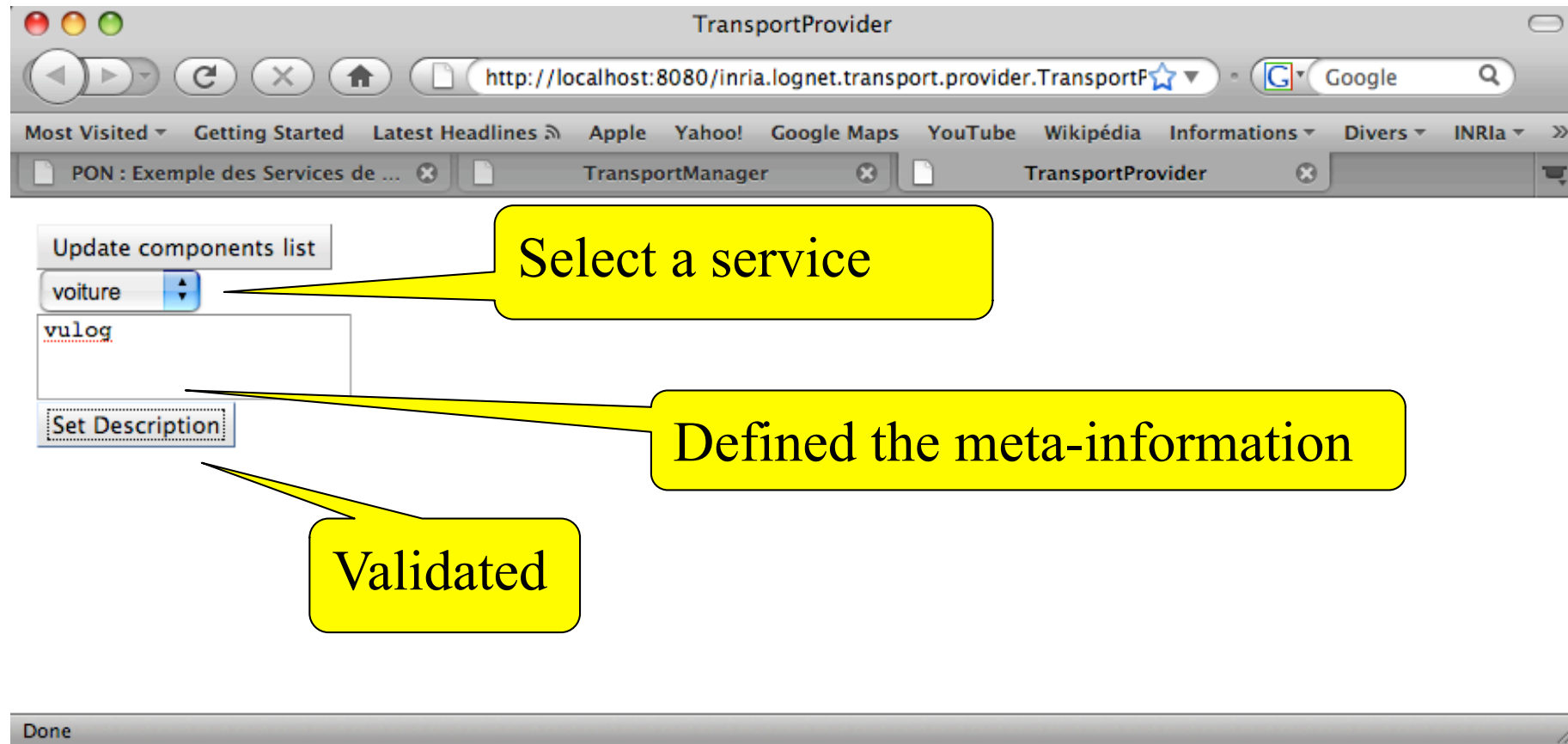
TransportClient

TransportClient tourne sur une autre JVM et ne connaît pas les services proches de sa position. Cliquez sur la carte, où le polygone que vous avez saisi est défini.

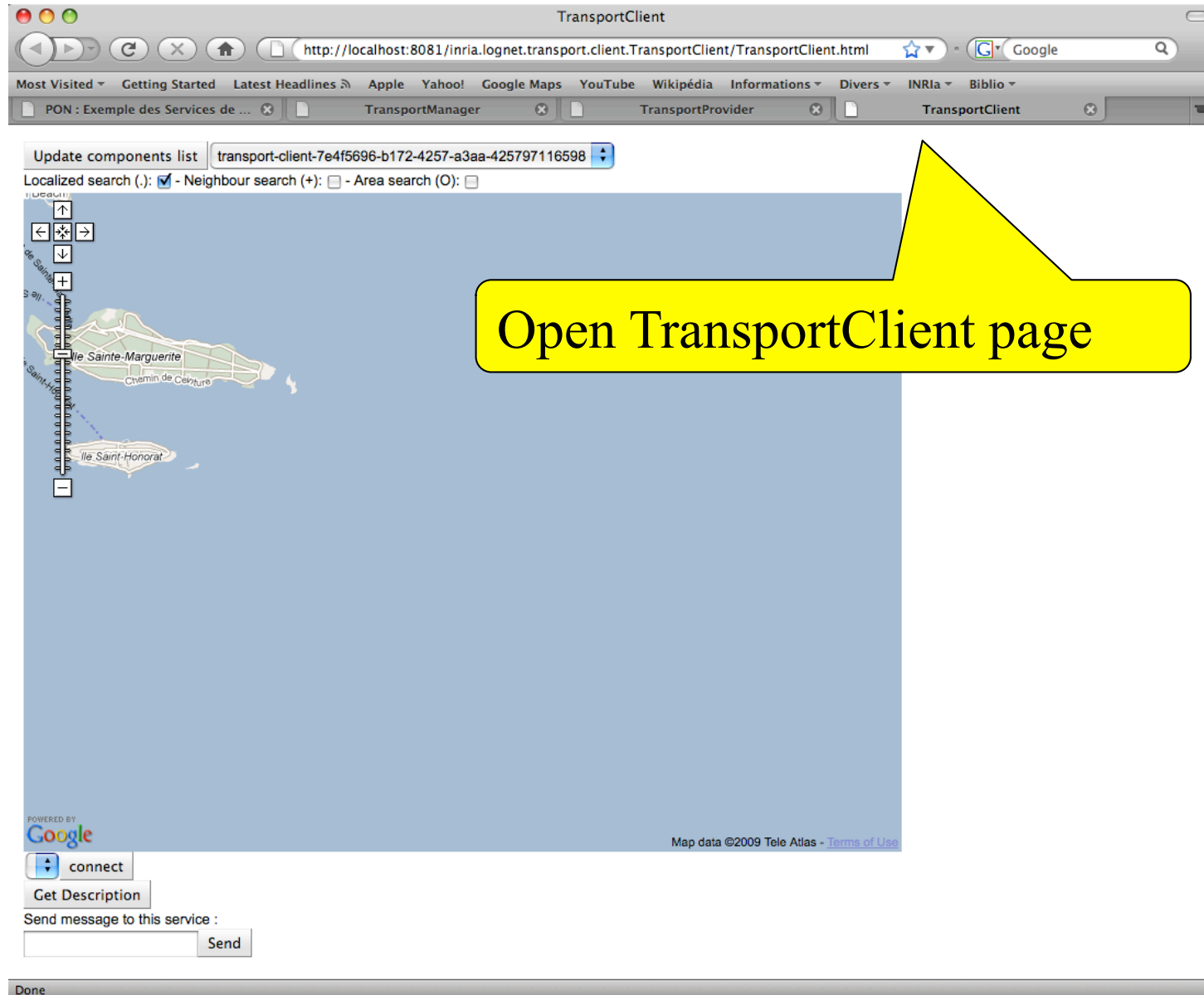
Gestion des services publiés



Defined the meta-information of a service



Subscribed at services



Search Services

The screenshot shows a web browser window titled "TransportClient" with the URL `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's address bar and tabs are visible. The application interface includes a search bar with the text "Update components list" and a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below the search bar, there are checkboxes for "Localized search (.)", "Neighbour search (+)", and "Area search (O)". The main area is a map with a red pin and a yellow callout box pointing to it with the text "Click on the map". Below the map, there is a list of available services: "voiture", "didier", "restaurant", "chemin", and "voiture". A yellow callout box points to this list with the text "The list of available services". At the bottom of the list, there is a "Send" button and a yellow callout box pointing to it with the text "Select a service". The status bar at the bottom of the browser window shows "Done".

Click on the map

The list of available services

Select a service

Subscribe at service

The screenshot shows the TransportClient web application in a browser window. The address bar displays `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's navigation bar includes links for 'Most Visited', 'Getting Started', 'Latest Headlines', 'Apple', 'Yahoo!', 'Google Maps', 'YouTube', 'Wikipédia', 'Informations', 'Divers', 'INRIA', and 'Biblio'. The application interface features a map of Paris with a red location pin and a yellow callout box labeled 'Defined his position'. A yellow callout box labeled 'validated' points to a 'GetDescription result: vulog' dialog box with an 'OK' button. A yellow callout box labeled 'Select a service' points to a dropdown menu showing 'voiture' and a 'connect' button. A yellow callout box labeled 'subscribe' points to a 'Get Description' button. A yellow callout box labeled 'retrieve the information' points to a 'Send message to this service:' input field with a 'Send' button. The bottom of the interface shows a 'Done' status bar.

Definition of meta-information of a service

The screenshot shows a web browser window titled "TransportProvider" with the URL `http://localhost:8080/inria.lognet.transport.provider.TransportProvider.html`. The browser's address bar and tabs are visible. The main content area displays a form with the following elements:

- A button labeled "Update components list".
- A dropdown menu currently showing "restaurant".
- A text input field containing "repas à 15 euros".
- A button labeled "Set Description".

Four yellow callout boxes with black text provide annotations:

- "Open TransportProvider" points to the browser window.
- "Select a service" points to the dropdown menu.
- "Defined meta-information" points to the text input field.
- "Validated" points to the "Set Description" button.

Use a service

The screenshot shows the TransportClient web application in a browser. The address bar displays `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's Most Visited list includes links to Apple, Yahoo!, Google Maps, YouTube, Wikipédia, Informations, Divers, INRIA, and Biblio. The application interface includes a search bar with the text "Update components list" and a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below the search bar, there are checkboxes for "Localized search (.)", "Neighbour search (+)", "Area search (O)", and "Area search (O)". A map of the Côte d'Azur region is displayed, showing locations like "Ile Sainte-Marguerite" and "Ile Saint-Honorat". A yellow callout box labeled "Open TransportClient" points to the browser window. Another yellow callout box labeled "Select a service" points to the search bar. A third yellow callout box labeled "subscribe" points to the "connect" button. A fourth yellow callout box labeled "Retrieve the information" points to the "Get Description" button. A fifth yellow callout box labeled "Validated" points to the "OK" button in a small dialog box that displays "GetDescription result: repas à 15 euros". At the bottom of the application, there is a "Send message to this service" section with a text input field and a "Send" button.

Open TransportClient

Select a service

subscribe

Validated

Retrieve the information

Definition of the meta-information of a service

The screenshot shows a web browser window with the URL `http://localhost:8080/mina.log`. The browser's address bar and tabs are visible. The main content area contains a form with the following elements:

- A button labeled "Update components list".
- A dropdown menu with the text "chemin" and a blue arrow icon.
- A text input field containing "4 km".
- A button labeled "Set Description".

Yellow callout boxes with black text provide the following annotations:

- "Open TransportProvider" points to the browser window.
- "Select a service" points to the "chemin" dropdown menu.
- "Defined the meta-information" points to the "4 km" text input field.
- "Validated" points to the "Set Description" button.

Subscribe a service

The screenshot shows the TransportClient web application in a browser. The address bar displays `http://localhost:8081/inria.lognet.transport.client.TransportClient/TransportClient.html`. The browser's Most Visited list includes links to Getting Started, Latest Headlines, Apple, Yahoo!, Google Maps, YouTube, Wikipédia, Informations, Divers, INRIA, and Biblio. The application interface includes a search bar with the text "Update components list" and a dropdown menu showing "transport-client-7e4f5696-b172-4257-a3aa-425797116598". Below the search bar, there are checkboxes for "Localized search (.)", "Neighbour search (+)", and "Area search (O)". The main area is a map of the Côte d'Azur region, showing the coastline and several islands, including Ile Sainte-Marguerite and Ile Saint-Honorat. A red pin is placed on the map. A yellow callout box labeled "Open TransportClient" points to the browser window. Another yellow callout box labeled "Select a service" points to the search bar. A third yellow callout box labeled "Subscribe" points to the "connect" button. A fourth yellow callout box labeled "Validated" points to the "OK" button in a small dialog box that says "GetDescription result: 4 km". A fifth yellow callout box labeled "Retrive information" points to the "Get Description" button. At the bottom of the application, there is a text input field with the placeholder "Send message to this service :" and a "Send" button.

Open TransportClient

Select a service

Subscribe

Validated

Retrive information

Update the meta-information of a service

The screenshot shows a web browser window with the URL `http://localhost:8080/inria.lognet.tr`. The browser's address bar and tabs are visible. Below the browser, a web application interface is shown. It includes a button labeled "Update components list", a dropdown menu with "restaurant" selected, a text input field containing "repas à 10 euros", and a button labeled "Set Description". Yellow callout boxes with black text provide instructions for each step: "Open TransportProvider" points to the browser window; "Select a service" points to the "restaurant" dropdown; "Defined a new meta-information" points to the "repas à 10 euros" text input; and "Validated" points to the "Set Description" button.

Open TransportProvider

Select a service

Defined a new meta-information

Validated

Publishing of the new meta-information

The client registered for the service is aware of a new information

Notification that the description has changed to:
from restaurant: repas à 10 euros

OK

Validated

Map data ©2009 Tele Atlas - [Terms of Use](#)

Meta-information published by a client

The screenshot shows the TransportClient web application running in a browser. The address bar displays `http://localhost:8081/inria.lognet.transport.client.TransportClient/Trans`. The browser's Most Visited list includes links to Getting Started, Latest Headlines, Apple, Yahoo!, Google Maps, YouTube, Wikipédia, and Inform. The application interface includes a search bar with the text `transport-client-7e4f5696-b172-4257-a3aa-425797116598` and a dropdown menu. Below the search bar, there are checkboxes for 'Localized search (.)', 'Neighbour search (+)', and 'Area search (O)'. The main area of the application is a map showing a coastal region with a green line indicating a path and a red pin. At the bottom of the application, there is a section titled 'Powered by Google' with a 'chemin' dropdown menu, a 'connect' button, a 'Get Description' button, and a 'Send message to this service:' section. The 'Send message to this service:' section contains a text input field with the text 'Didier est sur ce chemin' and a 'Send' button. Four yellow callout boxes are overlaid on the screenshot: 'Open TransportClient' points to the browser window; 'Select a service' points to the 'chemin' dropdown menu; 'Definition of a new information' points to the 'Send message to this service:' section; and 'Validated' points to the 'Send' button.

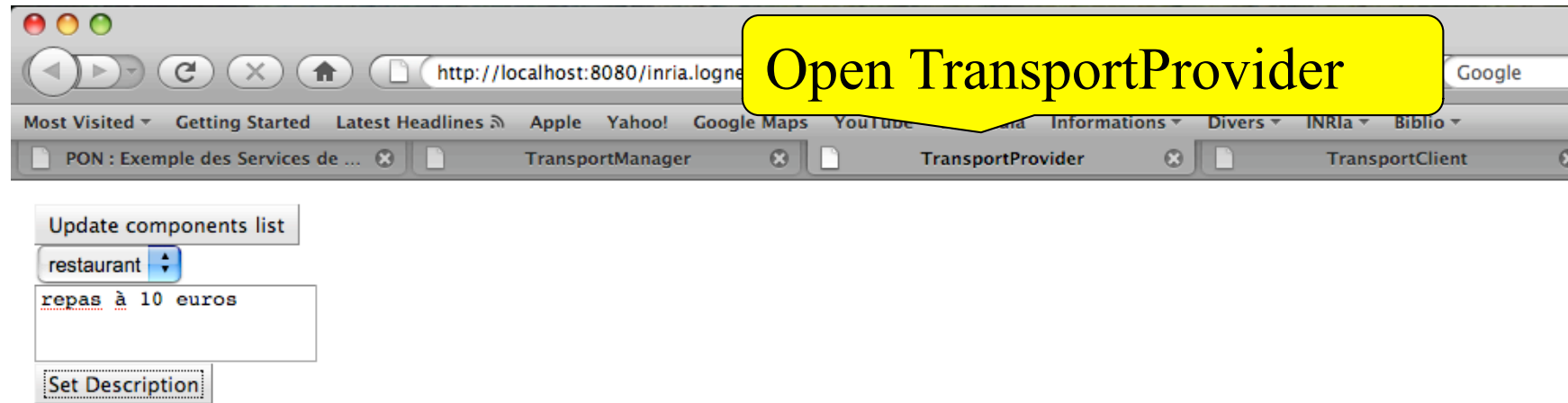
Open TransportClient

Select a service

Definition of a new information

Validated

Receipt of information defined by a client



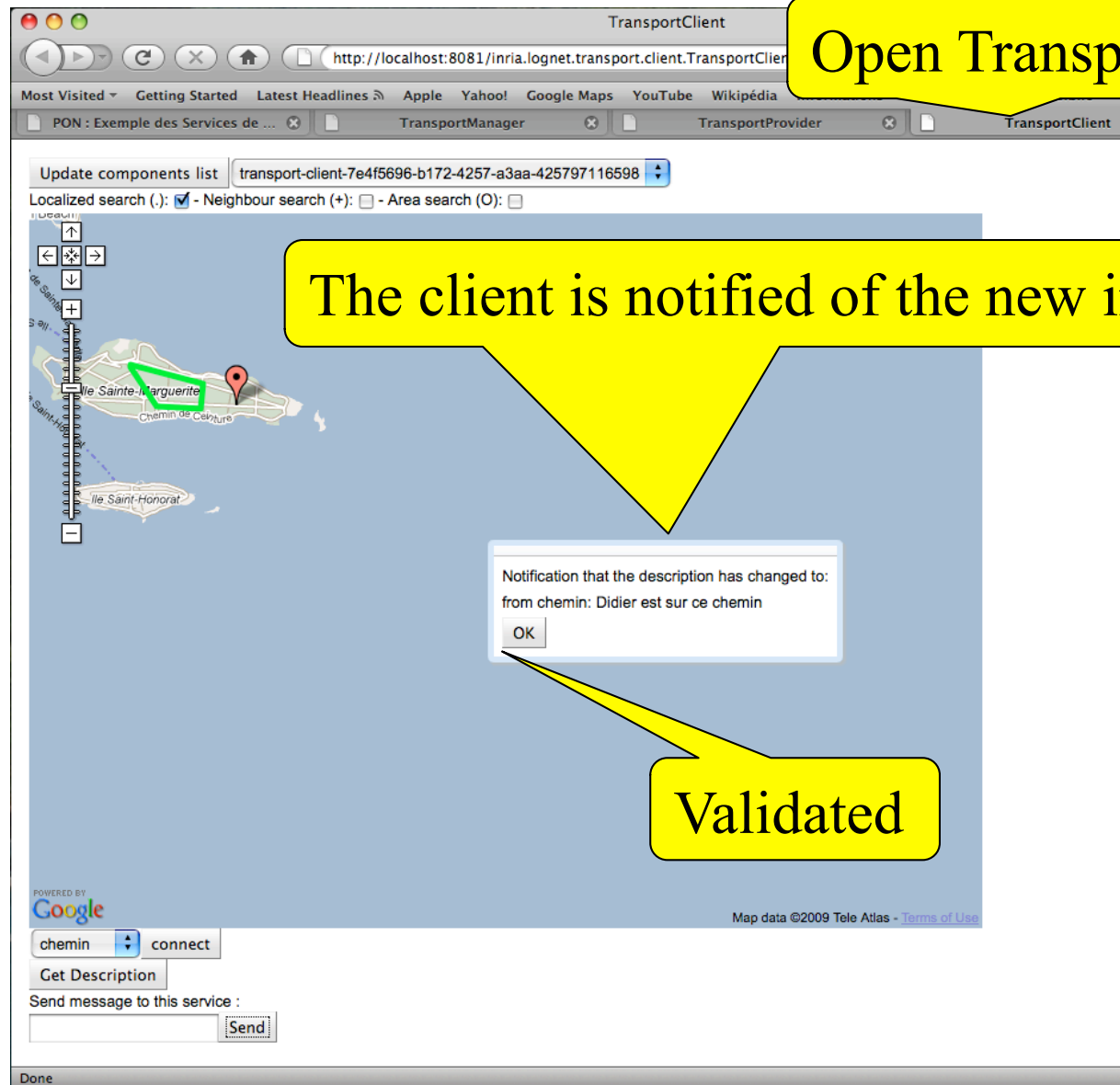
The service provider is notified of the new information



Accept

Refuse

Receipt of new information by the client



Open TransportClient

The client is notified of the new information

Validated

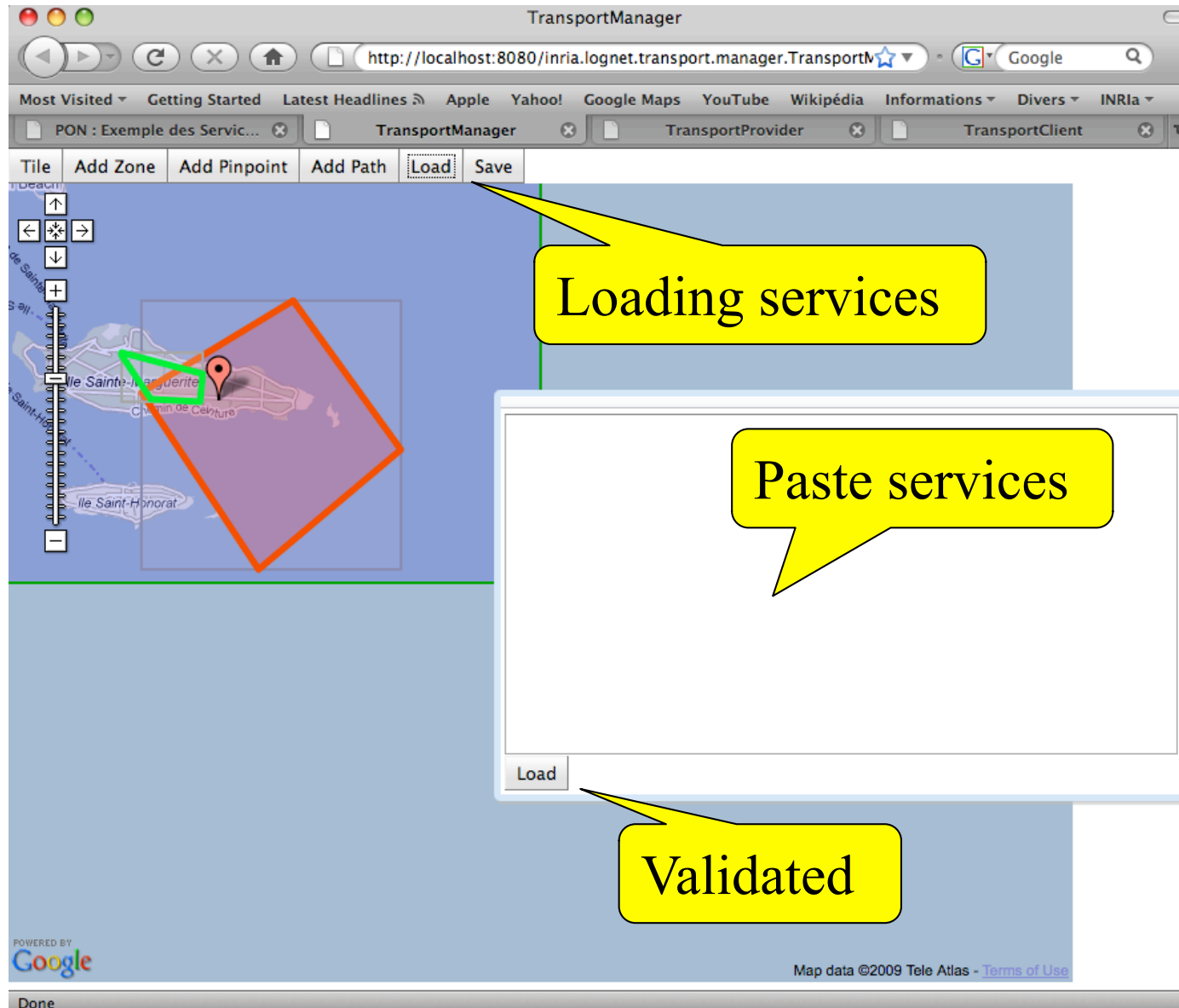
Backup services published

The screenshot shows the TransportManager web application in a browser. The address bar displays `http://localhost:8080/inria.lognet.transport.manager.TransportManager/TransportManager.html`. The interface includes a menu bar with options like 'Tile', 'Add Zone', 'Add Pinpoint', 'Add Path', 'Load', and 'Save'. A map of a coastal area is visible on the left. A yellow callout bubble points to the 'Save' button with the text 'Backup services published'. Another yellow callout bubble points to the map area with the text 'Copy into a file'. A third yellow callout bubble points to a 'Close' button at the bottom of a dialog box with the text 'Close'. The dialog box contains the following JSON data:

```
Please copy and paste this content to a file, you will be able to load this in future.
{"name": "restaurant", "latLng": "43.517061986894845,7.058200836181"}
{"name": "didier", "latLngs": [{"latLng": "43.52166770320007,7.046527862548828"}, {"latLng": "43.52166770320007,7.0729"}]}
{"name": "chemin", "latLngs": [{"latLng": "43.52166770320007,7.045841217041016"}, {"latLng": "43.51955160693377,7.0563"}]}
{"name": "voiture", "latLngs": [{"latLng": "43.51780888369251,7.0484161376953125"}, {"latLng": "43.52639753236828,7.067"}]}
```

At the bottom of the dialog box is a 'Close' button. The status bar at the bottom of the browser window shows 'Done'.

Loading services saved



End

Application of Publish /Subscribe of georeferenced services

Developed with Programmable Overlay Network
Software

See:

www-sop.inria.fr/members/Didier.Parigot/pon

