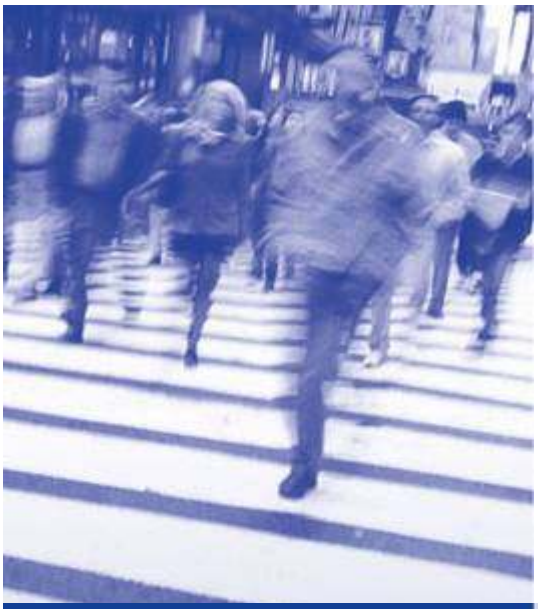

CiViTAS
Cleaner and better transport in cities

ARCHIMEDES
AALBORG • BRIGHTON & HOVE • DONOSTIA - SAN SEBASTIÁN • IAŞI • MONZA • ÚSTÍ NAD LABEM

Donostia – San Sebastian

T 75.1 Park & Ride VMS in Donostia – San Sebastian

Donostia – San Sebastian

November 2011

THE CIVITAS INITIATIVE
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1. Introduction

1.1 Background CIVITAS

CIVITAS - cleaner and better transport in cities - stands for CIty-VITAlity-Sustainability. With the CIVITAS Initiative, the EC aims to generate a decisive breakthrough by supporting and evaluating the implementation of ambitious integrated sustainable urban transport strategies that should make a real difference for the welfare of the European citizen.

CIVITAS I started in early 2002 (within the 5th Framework Research Programme);
CIVITAS II started in early 2005 (within the 6th Framework Research Programme) and
CIVITAS PLUS started in late 2008 (within the 7th Framework Research Programme).

The objective of CIVITAS-Plus is to test and increase the understanding of the frameworks, processes and packaging required to successfully introduce bold, integrated and innovative strategies for clean and sustainable urban transport that address concerns related to energy-efficiency, transport policy and road safety, alternative fuels and the environment.

Within CIVITAS I (2002-2006) there were 19 cities clustered in 4 demonstration projects, within CIVITAS II (2005-2009) 17 cities in 4 demonstration projects, whilst within CIVITAS PLUS (2008-2012) 25 cities in 5 demonstration projects are taking part. These demonstration cities all over Europe are funded by the European Commission.

Objectives:

- to promote and implement sustainable, clean and (energy) efficient urban transport measures
- to implement integrated packages of technology and policy measures in the field of energy and transport in 8 categories of measures
- to build up critical mass and markets for innovation

Horizontal projects support the CIVITAS demonstration projects & cities by :

- Cross-site evaluation and Europe wide dissemination in co-operation with the demonstration projects
- The organisation of the annual meeting of CIVITAS Forum members
- Providing the Secretariat for the Political Advisory Committee (PAC)
- Development of policy recommendations for a long-term multiplier effect of CIVITAS

Key elements of CIVITAS

- CIVITAS is co-ordinated by cities: it is a programme “of cities for cities”
- Cities are in the heart of local public private partnerships
- Political commitment is a basic requirement
- Cities are living ‘Laboratories' for learning and evaluating

1.2 Background ARCHIMEDES

ARCHIMEDES is an integrating project, bringing together 6 European cities to address problems and opportunities for creating environmentally sustainable, safe and energy efficient transport systems in medium sized urban areas.

The objective of ARCHIMEDES is to introduce innovative, integrated and ambitious strategies for clean, energy-efficient, sustainable urban transport to achieve significant impacts in the policy fields of energy, transport, and environmental sustainability. An ambitious blend of policy tools and measures will increase energy-efficiency in transport, provide safer and more convenient travel for all, using a higher share of clean engine technology and fuels, resulting in an enhanced urban environment (including reduced noise and air pollution). Visible and measurable impacts will result from significantly sized measures in specific innovation areas. Demonstrations of innovative transport technologies, policy measures and partnership working, combined with targeted research, will verify the best frameworks, processes and packaging required to successfully transfer the strategies to other cities.

1.3 Participant Cities

The ARCHIMEDES project focuses on activities in specific innovation areas of each city, known as the ARCHIMEDES corridor or zone (depending on shape and geography). These innovation areas extend to the peri-urban fringe and the administrative boundaries of regional authorities and neighbouring administrations.

The two Learning cities, to which experience and best-practice will be transferred, are Monza (Italy) and Ústí nad Labem (Czech Republic). The strategy for the project is to ensure that the tools and measures developed have the widest application throughout Europe, tested via the Learning Cities' activities and interaction with the Lead City partners.

1.3.1 Leading City Innovation Areas

The four Leading cities in the ARCHIMEDES project are:

- Aalborg (Denmark);
- Brighton & Hove (UK);
- Donostia-San Sebastián (Spain); and
- Iasi (Romania).

Together the Lead Cities in ARCHIMEDES cover different geographic parts of Europe. They have the full support of the relevant political representatives for the project, and are well able to implement the innovative range of demonstration activities.

The Lead Cities are joined in their local projects by a small number of key partners that show a high level of commitment to the project objectives of energy-efficient urban transportation. In all cases the public transport company features as a partner in the proposed project.

2. Donostia – San Sebastian

The city of Donostia -San Sebastián overlooks the sea and, with a bit more than 180,000 inhabitants, keeps a human scale. Some people consider the balanced combination of small mountains, manor

buildings, and sea as the setting for one of the most beautiful cities in the world. We have a tradition in favouring pedestrians, cyclists and public transport.

For about twenty years, the city has been enforcing a strong integrated policy in favour of pedestrians, bicycles and public transport. Considering walking and cycling as modes of transport has led to the building of a non-motorised transport network for promoting this type of mobility around the city.

Likewise, the city has extended its network of bus lanes. The city holds one of the higher bus -riding rates, with around 150 trips per person per year.

2.1 Objectives in CIVITAS

The CIVITAS project is a perfect opportunity to expand our Sustainable Urban Transport Strategy. With the package of CIVITAS measures Donostia-San Sebastián wants to:

- Increase the number of public transport users
- Decrease the number of cars entering in the city centre
- Increase the use of the bicycle as a normal mode of transport
- Maintain the high modal share of walking
- Reduce the number of fatal accidents and accidents with heavy injuries
- Reduce the use of fossil fuels in public transport.

3. Background to the Deliverable

This deliverable concerns Measure 75, Park & Ride Parking Guidance System in Donostia – San Sebastián.

The parking occupancy is a remarkable factor that is an indicator of the amount of cars that move through the city, as many of them have make use of such parking facilities. Apart from the range of normal reasons for travel to and within the city, the search for an available parking space could be considered as an additional factor in traffic generation, particularly at times of peak demand when finding an available space is difficult.

The following table gives the occupancy values for some of the most used underground parking facilities in Donostia – San Sebastian. Values shown are for a six month period.

PARKING	CUMULATIVE OCCUPANCY
Txofre	94.058
Okendo	268.888
Easo	78.671
Buen Pastor	247.685
Amara – PIO XII	66.612
Boulevard	299.784

Table 1. Underground Parking occupancy data referred to 1st half of 2011

According to those figures, it is clear that the mobility generation by the search for parking also needs to be controlled. In that sense the municipality of Donostia – San Sebastian started a strategy to help drivers in their search for parking, installing several static signposts to guide them to underground park facilities.

The next step in improving parking policy has been to direct not only drivers who are already in the city but also those who are on the point of entering the city, through the use of Variable Message Signs (VMS). The technical features of the new information signposts were explained in the ARCHIMEDES deliverable, R75.1, together with information about the planned locations. The set of all infrastructure and equipment are collectively known as the Parking Guidance System (PGS) that not only provides better traffic control but also improves all secondary impacts of that control, such as a pollution reduction, less congestion situations and risk of accidents.

3.1 Summary Description of the Task

Within measure 75, task 8.10 covers the commisioning of the information panel system in the city of Donostia – San Sebastián. Working signposts are presented and a deeper explanation of the data centralisation system is provided.

Since the implementation of the P&R facilities is still being defined, it has not been able to link the parking guidance system for them, so this report is limited in that the system currently provides guidance only to the underground parking locations.

4. Park & Ride VMS in Donostia – San Sebastian

4.1 – Signpost Commisioning

In deliverable R75.1 about the process of successful installation of all panels in their defined location was described.

Although most of the underground parking facilities use the same system management for available parking spaces, the need to find a way to receive the same kind of information from all car parks including those that operate with a less common management systems, hindered the implementation of the panels.

The panels that were finally installed are shown in the map on the next page, using information provided from the data centralisation system software.

Two types of panel were installed depending on the type of information to be conveyed:

- Variable message signs (VMS), installed at entrance points to the city and at key strategic points on main routes. On these panels, the city's parking status information is shown, either individually or **grouped by zones** . Warnings/recommendations, or any other type of information that the system co-ordinates can also be also displayed.

- Parking availability information signposting, installed alongthe main routes used by drivers when searching for parking spaces. On these panels information is displayed about the available places in each parking facility plus an arrow indicating its location.

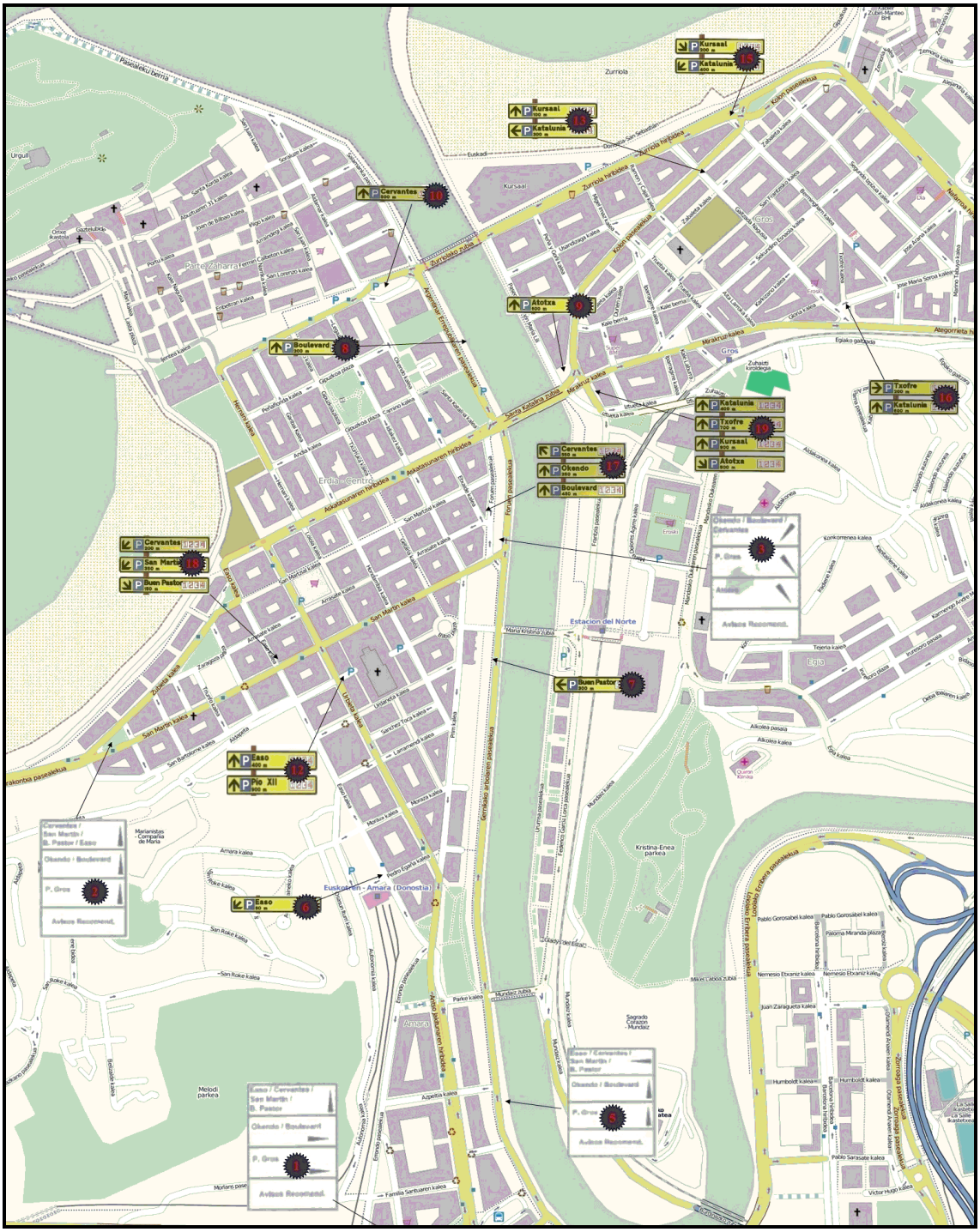

Fig. 1. Location of installed panels in Donostia – San Sebastian

The following images show the aforementioned panels working.

Fig 2. VMS panel in Paseo del Arbol de Gernika

Fig 3. Underground parking information panel in San Martin Street

Fig 4. VMS panel in Paseo Bizkaia

Fig 5. Information panel in Navarra Av.

4.2 – Data Centralisation System Operation

As we explained in deliverable R75.1, all the installed signposts, parking availability information signposts and Variable Message Signs (VMS) panels, are controlled and monitored through specific software programme.

The main screen shows the information about parking facilities and the information panels. This screen is divided into three main sections:

- the main menu (on the left),
- information about each of the parking areas in the centre of the screen,
- and information regarding the display panels on the right.

The following screenshot shows this main screen.

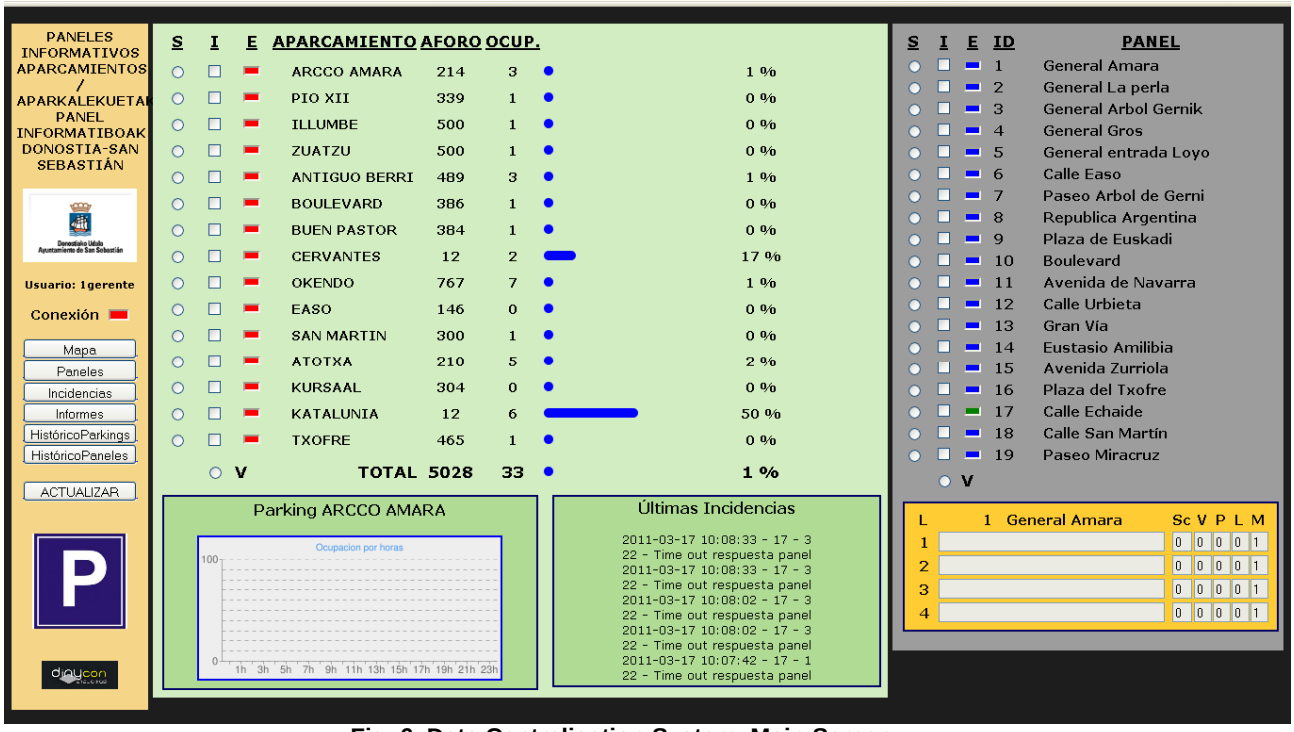

Fig. 6. Data Centralisation System. Main Screen.

Parking Facilities Section

This is the main section and it shows a list of all the parking areas in the city. The section is divided in columns, and within these columns, the first two allow the controller to interact with each parking facility whereas the other columns are all information columns. In this sense, the section offers the list of parking with their respective names (“Aparcamiento” column), the capacity of each park location (“Aforo”) and its occupancy, both numerically and graphically (with the occupancy percentage). The occupancy rates are updated in real-time, and the updated values are redirected directly to the panels across the city.

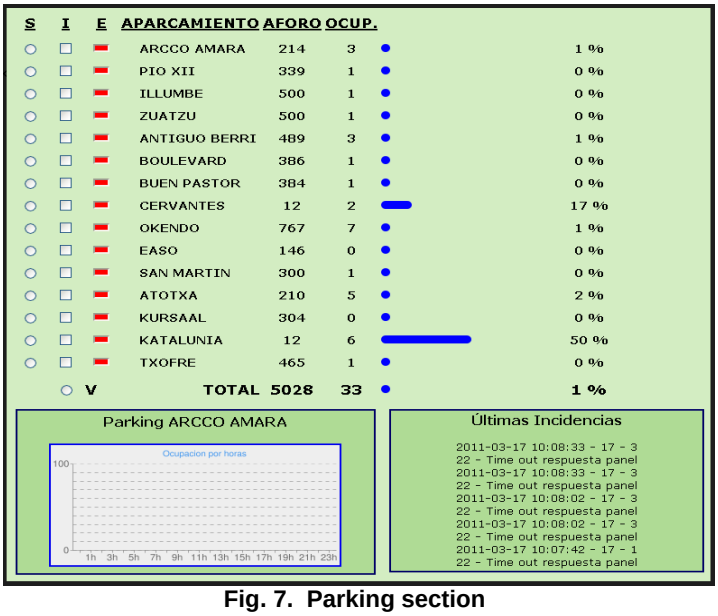

Fig. 7. Parking section

As we mentioned in the previous paragraph, the first two columns allow us to interact with each parking facility. This is done as follows:

- The first one ("S"), allows the users to select each parking individually, to watch the level of occupancy during the last hours through the graph that appears at the bottom of the section. The box to the right of the graph also shows information about the selected parking and it refers to the recent incidents related with the connection, mainly lost connections.

- The second column ("I"), allows the user to remove the selected parking area from the information displayed on the panels, in case of an information error.

Panels Section

This section of the screen can also be considered in two parts: The upper part shows a list of panels and in the bottom part we see information about the selected panel at the top.

Figure 8 shows an image of this section:

Fig 8. Panels section screen

The interaction columns are the same as in the central section of the screen, ie the S column is used to select a specific panel; after selecting the panel, the bottom of this section (yellow box) shows information about the selected panel as follows:.

- At the top the ID and name of the selected panel are shown.
- L: Indicates the display line
- __: Text that appears on that line in that panel. The text will be showed in red, yellow or green as selected.
- Sc: Scroll of the panel
- V: Speed of the scroll
- P: Flashing of the panel
- L: Brightness of the panel
- M: Panel Mode: The panel mode can be automatic or manual, but it can only modify information in the panels when the panel mode is manual.

In this section the information of each panel's parameters is only visual. It is not possible to modify the values in this section. To make a modification, it is necessary to go to "Panels" section in the menu bar of the main screen.

Modify Panel Section

On this screen it is possible to change the information displayed in panels.

After selecting the panel a screen is displayed as shown in Figure 9. In this screen you see information about the selected panel and the options that help us to define the new features of the text that the panel shows.

Fig 9. Modify panel screen

Description of information for the selected panel:

At the top the ID and name of the selected panel are selected.

- L: Indicates the display line
- __: Text that appears on that line in that panel. The text will be shown in red, yellow or green as selected.
- Color → The colour of the text of that line.
- Lumin → Brightness of the text (this parameter has a special treatment and in some panels can only be changed on the first line, as the other lines take its value).
- Flecha → The arrow that the panel shows in that specific line.
- Modo → The mode of that line of the panel can be manual or automatic. As mentioned previously, to make any change it is necessary to select the manual mode. Manual mode might be necessary to make an adjustment in the fourth line, for example to notify motorists about congestion or roadworks on the normal route.

It is necessary to note that the fourth line on VMS panels is only intended for warning and recommendation messages

The result of the different parameter selection is shown in VMS or information panels as we shown in the previous images with another example in figure 10.

Fig 10. Example of the display lines in a VMS panel

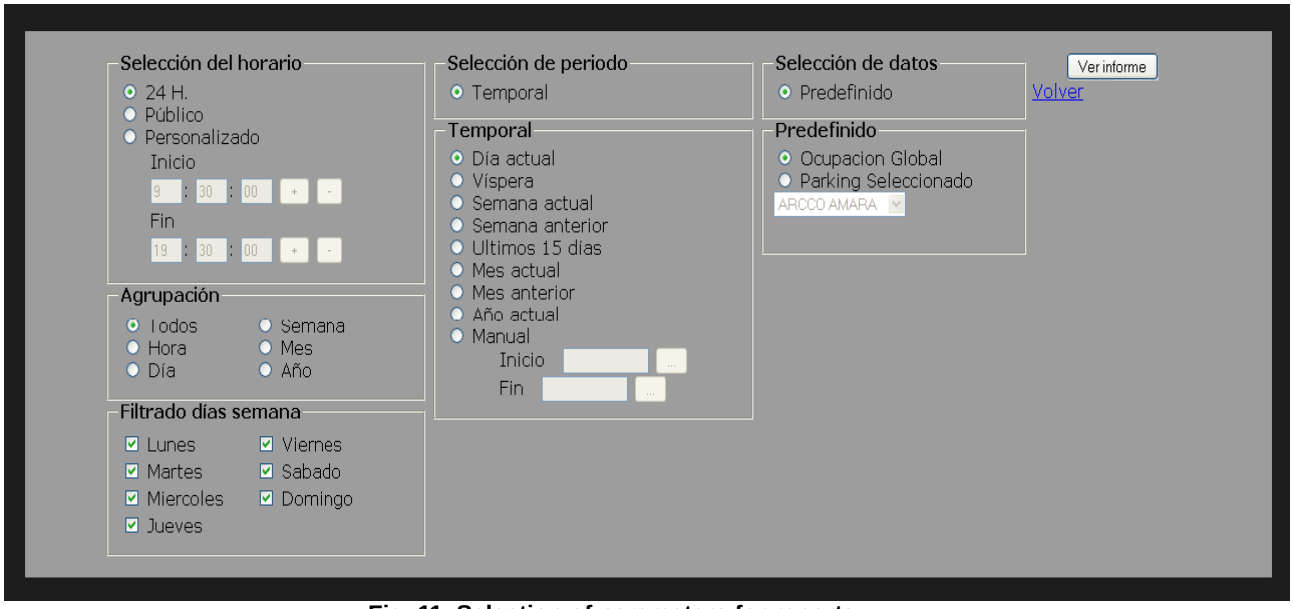

Fig. 11. Selection of parameters for reports

As would be expected, the software allows the preparation of different types of reports based on information received from each parking facility. The following image shows the different parameters that the software offer to define the kind of report wanted.

Options are flexible to include reports by day of the week, time of day, and for selected periods ranging from a user defined period of a few minutes to the whole year, or for a recurring period of time.

4.3 – Problems Identified

A number of problems were identified, which delayed the commissioning of the whole system

- Differences between the City Council and company that won the contract in the interpretation of contract statements. The contractor at first refused to assume the cost of adapting operating systems in order to issue the parking occupancy data, understanding that operators must submit the data on their own occupation. Several meetings between the contractor and the operator of the parking areas were needed to clarify the works and services before the company assumed the completion of this work.

- Problems in the commissioning the data communication line to the parking area occupation server located in the Traffic Lights Control Room. After several attempts by the Municipal Computer Centre to install a reliable connection, finally decided to place the server outside the Dept. of Mobility.

- The adaptation of the operating systems of the parking control system has become more complicated than expected because of the need to safeguard its security, something that the operators have demanded.

4.4 – Risks and Mitigating Actions

The main risk has been advised by the operator (Skydata) who detected a potential vulnerability when sending occupancy information from each parking. To reduce this risk, the operator proposed the installation of a server to collect information from all car parks, and this server will send all information to the data centralisation system. This confines the risk to a single channel.

4.5 – Next Steps

The system is still in its early stages and customization of certain functions with its setup continues to be reviewed by City council staff.

Once the usefulness of the system is confirmed, the possibility of including information about surface parking to serve as an alternative to underground parking will be considered. This information would give the driver other criteria when choosing their parking spot, based on the location of surface parking and the corresponding cost zone.

The only P&R facility (Lautximinieta) that will soon be regulated will also be included in the system to complete the coverage of existing parking supply in the city.

Evaluation of the measure will now be conducted according to the measure evaluation template.