Introduction

Demographic Censuses are the largest project a country's statistical office has to undertake periodically.

The designation *Demographic Censuses* comprises three different censuses: the Population Census, the Housing Census and the Building Census. Another census, with an economic nature, is carried out in the light of the latter: the Commercial Premises Census.

Of all three Demographic Censuses, the Population census is unquestionably the most important and the one with the most longstanding tradition. **The first modern population census,** considering the person as the unit for analysis, **was performed in Spain in 1768 by the** Count of Aranda under the rule of Charles III.

Other notable operations were the 1787 Census carried out by Floridablanca and the census performed ten years later by Godoy in times of Charles IV.

However, the first series of *official* censuses commenced in 1857 with the first operation performed by the Kingdom's General Statistics Commission, which was followed shortly by the 1860 census. The following operations were performed in 1877, 1887 and 1897. As of the year 1900, Population Censuses have been performed every ten years without exception.

In all, the Population Census performed taking November 1st 2001 as the reference date is the **sixteenth** official Census operation performed in Spain.

The successive population censuses performed in each country depend on their census tradition and the historical moment in which the operation is carried out. The census project for 2001 was developed over a very long period, which commenced just after concluding the dissemination of the results of the previous Census. In June 1996, the INE prepared a document entitled *"Reflections on the Demographic Census for 2001"*, presenting general considerations regarding the approach that would be used in the main stages of the next Census, in view of the experience obtained from the previous 1990-91 Census.

The **Draft** is another important landmark in the preparation of the future Censuses, it was published in December 1998 and was disseminated widely among the Autonomous Communities Statistics Institutes (with which previous agreements had been established, at least as regards the essential aspects), a great number of Organisations of the Administration, as well as a wide selection of experts in this matter. The originality of this Draft, compared to previous Censuses, lied in the open approach, based on the study of all the variables that could be included in the Census, analysing their usefulness in detail, as well as the different arguments for and against their inclusion, the collection method, the formulation proposed, the variant options.

Both documents were widely accepted and stimulated the dispatch of a great number of comments and suggestions, which have improved this census project and have, specifically, ensured it reflects the genuine needs for information of the contemporary Spanish society. Unfortunately, we have not been able to consider all the interesting suggestions, although we would have liked to. The resulting global content has been sifted in terms of the basic principles that are the basis of these Censuses: on the one hand, to maintain the work load in acceptable limits (particularly by not including questions that could cause social rejection) and, on the other, to reduce the time the numerous users of the census have to wait to access the results.

The main methodological particularity that characterises these censuses is probably the fact that, compared to previous Censuses, **administrative records have been exploited to the most possible extent,** specifically the Municipal Register of Inhabitants and the Urban Cadastre database. In fact, the combination of both directories allows a single census itinerary (and implies enormous economic savings), since the preparation process that was traditionally performed in years ending in 0 (called *Censuses of Buildings and Commercial Premises)* will be replaced by crossing both computerised databases, thus resulting in great advantages.

The characteristics of buildings and premises are also contained in the *Itinerary Notebooks* (also known as *Agent Notebooks),* in which the directories generated by the crossing of information are printed beforehand. The advantages of knowing the existing postal addresses beforehand and simply verifying them are many and varied, but the most important is the improved census coverage (as regards buildings, dwellings and persons) that results from this simplification of the operation.

Population and housing censuses also take advantage of the available administrative information, so as to **bother citizens as little as possible, without asking them for data that we are already in possession of**. Thus, the register data for each person will be printed on a separate page (to emphasise its special nature), so that respondents simply have to verify them or, if necessary, modify them. These data no longer appear in the census questionnaires themselves, thus reducing the time each household has to dedicate to the census operation.

It is necessary to point out that until the recent legislative reform, the content of the Register was not as useful for the Census as previous information to work with, given the duplicate entries it contained as a consequence of the fact that each Municipal register was managed with absolute autonomy with regard to the other registers. Currently, municipal registers are managed using computer resources and the National Statistics Institute has to coordinate all operations, thus detecting duplicate or incorrect inscriptions and performing the necessary operations to control the precision of the registers.

In all, the 2001 Spanish Censuses combine the traditional method, i.e. a thorough analysis of the territory carried out by visiting the area to collect information from all census units, with strong support from administrative records. As occurred with the 1990-91 Censuses, **data will be exploited exhaustively,** as this will allow us to answer the growing demand for information for small geographical areas, with no other limit than the confidentiality of the information, thus recouping the economic cost of the census operation.

1. 2001 Spanish Censuses: classical censuses, register-based censuses, or complementary sample investigation of the Register.

In the next global round of Demographic Censuses, the prevalence of *classical censuses* (that is, Censuses based on a thorough investigation carried out by visiting the whole of the territory) will continue to be patent. It will, in fact, continue to be the method used in countries like France, Italy, Great Britain, United States, Canada, Australia, New Zealand, Greece, Portugal and most Latin American countries.

However, this will be compatible with a certain increase in the exploitation of the records, either to use them as a basis (Nordic countries), to support the classical census (Spain, Switzerland, Belgium, Austria, Portugal Singapore...) or to complete them with sample surveys (although Holland is the only country known to use this option, whilst Belgium is considering adopting this method).

For Spain, the most appropriate option in terms of the current circumstances is a ***Classical census*** that exploits the existence of the ***Continuous Register*** appropriately for the first time.

Specifically, the best option for the 2001 Spanish Censuses is an **operation based on a thorough itinerary around the territory, strongly supported by the Continuous register and by a single, comprehensive questionnaire.** Conversely, the following alternatives are still considered unfeasible at present:

A. Census based exclusively on administrative registers

Spain is still quite removed from this possibility, however much it is considered a direction we have to move towards (and in fact, this census will stand as a significant step in this sense); this unfeasibility is due to the following multiple and very relevant reasons: probable need for delicate legislative reforms, possible problems for social acceptance, non-existence of a common identity number for each person, administrative information is not standardised and cannot be exploited easily from a statistical perspective.

B. Register (Continuous register) + sample survey

Given the scarce demographic information contained in the Register, this option would imply a serious backward step in the quality and level of detail of the information for specific population groups (small geographical areas, groups whose level of training requires a high conceptual breakdown...), which is probably the biggest success of the 1991 Censuses.

Furthermore, it is too early to trust the Continuous register exclusively for population counts, as it was only implanted recently.

This Census-Register relationship could even present legal problems; specifically with article 79 of the new Population Regulation *Royal Decree 2612/1996, passed on December 20th),* that imposes a more comprehensive and symbiotic interrelation between both files. However, in future not only will the Census be based on the Register, but also, census tasks should be used to control the exactness of the Register information and enter the necessary rectifications[1]. These operations could not be fulfilled if the Census simply took for granted the content and coverage of the Register and complemented it via a sample survey.

In all, the option of performing a Census based on sampling (even after assimilating the paradox this expression involves) is clearly

[1] Obviously this Census-Register relation should be established with the due operative caution. The following chapter is dedicated expressly to this important census aspect.

unsatisfactory. Indeed, apart from the previous conclusions, it is important to consider that:

a) The Continuous register could be used as a record of persons but could never be used as a record of dwellings, buildings or households. Considering that it were possible to form one of these (using the Cadastre, the Land Register...) in Spain, it would require a long preparation process[1].

b) Considering the statistical data contained in the Register, it only includes a scarce amount of thorough information: sex, nationality, and date and place of birth.

c) The count of persons would not be very reliable, as we would have to trust the exactness of the Continuous register very shortly after its implementation and with an original base (the 1996 Renovation) that obviously presents some errors. Furthermore, given their nature, some of these errors cannot be corrected via the mere aggregation and comparison of the register files the INE has (fictional persons, persons who no longer reside in the same place but have not been removed; symmetrically, residents that are not registered officially, ...). All these errors could be detected, at least most of them, thanks to the exhaustive fieldwork that has been proposed for the census.

d) In the scope of EUROSTAT, there is only one Census (the Dutch one) that uses a similar method (register + sample survey). However, circumstances are different:

For over a decade, they have been preparing a continuous system for demographic information (based mainly on the Civil Registers, but completed with files from the Social Security, Treasury, Cadastre, Education...), which is now perfectly implemented and provides a lot more information than the Spanish register; this aspect is aided by the relatively small size of the population in this country.

• This system allowed them to pass a law in 1990 that removed the obligation to perform Censuses without the demographic information suffering too badly.

• The quality and, specifically, the level of breakdown included in the Dutch *pseudo-censuses* are below those obtained in the Classical censuses performed in most other countries, and even in the *Censuses based exclusively*[2] *on administrative registers,* typically used in Nordic countries. The only advantage lies in the periodicity of the basic results, which are practically continuous.

e) A sample survey containing the basic content of the Censuses would simply be meaningless: it would hardly provide additional information with regard to the INE's other demographic surveys[3], which focus more precisely on the specific issues they analyse.

In all, two of the main objectives of the Census (on the one hand, to facilitate a reliable count of the population, by verifying the precision of the register data; on the other, to provide basic socio-demographic information for very broken down

[1] In the Finnish case, although they were historically in possession of a great amount of high quality administrative records and in a country much smaller than Spain, it took them 20 years (from 1970 to (1990) to completely abandon the classical Census.

[2] Thanks to the greater coverage and content and/or exploitation with statistical purposes

[3] At most, depending on the size, it could be used to obtain results with a slightly greater level of break down, but this could hardly justify the cost.

geographical and conceptual levels, furthering the path opened by the 1991 Censuses) could not be achieved using a demographic survey performed to complement the Continuous register.

Some examples of socio-demographic issues that are considered of great interest and topicality can only be answered correctly using a comprehensive census. Thus, they could not be covered appropriately using the Register + sample survey option:

- Analysis of the processes of emancipation and insertion into the labour market.
- Educational inequalities and level of education.
- Detailed structure of occupations.
- Relationship between the studies performed and the occupation.
- Number, and characteristics, of de facto couples.
- Models of coexistence, family structures... and relationship with the characteristics of the dwellings.
- Most frequent journeys between the place of residence and the place of work/study (and means of transport).

C. Classical Census

A Classical Census, considering this to be a comprehensive population count, with slight or no relationship with the Register, would not be appropriate either: as well as not suitably maximising the potential savings brought about by supporting the information with data from the Register, it would not satisfy the common benefit relationship established in article 79 of the Population Regulation.

As a conclusion, the type of census used in this project is a Classical **Census based strongly on the Continuous register and with a single[1] questionnaire model, that is implemented exhaustively.**

Specifically, the project does not consider it feasible to combine a comprehensive questionnaire with very few variables and a sampling questionnaire with a much greater content (that could be sent, for example, to one in five/six households, as Canada or United States do with their *long* questionnaires, reserving the comprehensive nature of the process to the enumeration and completion of *short questionnaires):* Spanish censuses are some of the shortest in the world in terms of the number of variables investigated but, in exchange, the thoroughness (especially given the growing relevance of the data for small geographical areas) cannot be denied.

[1] Generating the corresponding bilingual models in regions that have their own language, used simultaneously with Castilian Spanish.

2. Relation between the 2001 Population Census and the Municipal Register of Inhabitants

As established in the legislation valid until the endorsement of Law 4/1996, which reformed the Regulation of the Basis of Local Regimes on issues referring to the Register, in years ending in 1 the Municipal Register and the Population census should be performed jointly, using separate registration sheets to preserve the different nature of both documents. Although the goal of the Population census and of Municipal Register has always been different, the joint execution of both documents ensured the population figures extracted from these analyses coincided.

Performing both operations simultaneously, as well as the aforementioned coincidence of population data, also implied a series of reciprocal advantages. In this way, for example, census collection tasks benefited form the infrastructure provided by the councils. Another major advantage the Censuses provides for the Register is the greater exactness of the population figures obtained.

The aforementioned Law 4/1996, passed on January 10th, modifying the Regulation of the Basis of Local Regimes as regards the Municipal Register, and which suppresses successive five-yearly Renovations, implies that this context is no longer applicable to future Censuses and, specifically, to the 2001 Census. Therefore, it is important to determine a new **framework for the relationship between the Register and the Population census.**

In order to do so, the first thing is to establish the power, the obligation even, of the National Statistics Institute to use register information for administrative purposes, and not only, as expected of its nature, for statistical purposes. This obligation is established in article 17.3 of the aforementioned Law 4/1996:

Art. 17.3. The Councils will send the National Statistics Institute the data from their corresponding Registers, in the manner established in the regulations of the State General Administration, so that the information provided by the Registers of all the municipalities can be coordinated.

The National Statistics Institute, attempting to solve possible errors and avoid duplicate entries, will perform the necessary verifications and will inform the Councils of the actions and operations needed to ensure the register data can be used as the basis for the compilation of population statistics on a national level, so that the figures resulting from the annual revisions can be declared official, and so that Councils can send the information from the Electoral Census once it has been duly updated.( )

After clarifying the double purpose (administrative and statistic) that allows, and obliges, the INE to use Register data, it is necessary to further the new relationship that has to be established between the Register and the Population census. This is precisely this purpose of the **new article 79 of the Population Regulation,** which preserves the relationship that has been valid to date and has been beneficial for both operations[1]:

Regarding the *danger* of establishing links between local administrative population records and Demographic Censuses, there is quite a widespread *unfavourable interpretation* that is based on the failed German Censuses of 1982, which, if taken as a stereotype and without nuances, can lead to a totally false conclusion establishing that, in our case, there should be no relationship between the Register and the Population census.

Therefore, it is important to point out that the problem that arose in 1982 in the German Census was brought about by the fact that the census law, which was subsequently declared unconstitutional, established the updating of the data contained in the local population records using the data collected in the census questionnaires. This ambivalence of the information contained in the census questionnaires, on the one hand protected by statistical secrecy, and on the other used with a nominal nature and with administrative effects, led the German Constitutional Court to declare the specific articles of the census law that established the non-statistical use of census data as unconstitutional.

Art. 79. The establishment of the Population census, which is strictly the competence of the National Statistics Institute, will be based on Municipal Register data and will be performed with the collaboration of the Councils that the National Statistics Institute deems fit, and will be used to control the precision of the register data and, if applicable, to enter the necessary corrections.

When performing this operation, the necessary measures will be implemented to keep the census data, which are subjected to statistical secrecy, separated from register data, which are nominal and have essentially administrative purposes.

The expenses this collaboration causes the Councils will be defrayed by the General State Budgets.

In order to understand the meaning of this article better, it is important to refer back to the two previous articles, all in the Chapter III of the Regulation, dedicated to the *verification and control of the Municipal Register.*

Consequently, as established in article 77, Councils have the obligation of performing systematic sampling and control operations, which should be emphasised in population sectors with the highest mobility rates; and the INE will provide technical support for these operations to the Councils that request it.

Nevertheless, the subsequent article, no. 78, is the most relevant for the matter in question, since it expressly allows the INE to *carry out operations to control the precision of the Municipal registers, informing the corresponding Councils of the outcome, and of the measures they have to take to make their Register more precise.* It also explains that these operations, either to control or update the Registers, can be performed jointly with the Councils that request it.

Therefore, article 79 is a concrete materialisation of the control operations the INE will perform, as it establishes that, so as to form the Population censuses, each of one of these operations related to controlling the precision of the register data will be performed obligatorily, as it will be used to insert the necessary corrections. This comparison of the Register and the reality of the area has the added value of being comprehensive and simultaneous in all Councils, and of supposing a minimal additional cost, as it exploits the contact with all citizens that takes place during a census operation.

After establishing the new normative framework, it is time to move on to **establish the material form of this simultaneous operation that compares the Register and the Population census.**

After considering all the possible options, we have reached the conclusion that the only solution that meets all technical and legal requirements involves sending each dwelling, as well as the census questionnaire, the register data the Council is in possession of at that time[1], so that the persons can verify the correctness of the information, and enter the corresponding corrections, if needed.

Consequently, the Census was not carried out. Therefore, said connection has to be performed so that census data are not used to modify register data or added to register files. This guarantees that the negative conditions that appeared in the German case are avoided in the Spanish operation.

[1] Integrating both sets of data, from the register and the census questionnaire, in the best possible manner ensuring that, on the one hand, citizens are bothered as little as possible, and, on the other, the necessary separation between the census information, which can only be used for statistical purposes, and the register information, that has a nominal nature and administrative purposes, is guaranteed.

Subsequent proposals for the modification of register data, which will be performed by some citizens, will be entered into the computer as soon as possible and sent to each Council involved. In turn, after carrying out additional verification procedures, the Council sends the INE the variations it accepts and has introduced in the corresponding Register.

Finally, the INE, after receiving the confirmation, can consolidate the variations, proposed by the citizens and accepted by the Councils, in their copies of the register files. Thus the council's municipal autonomy as regards the Register will be respected scrupulously at all times.

The key points of the proposed process can be summarised as:

a) The Population census is based on the Register data to improve precision and cut costs and bother the citizens as little as possible, taking advantage of the fact that register data can be used legally with statistical purposes.

b) The data collected in the census questionnaires are not transferred to the Register (as this would violate statistical secrecy).

c) The modifications entered by the inhabitants in their register are noted on specific sheets and sent to the Council so that, after performing the necessary verifications, the Register is updated with the corrections.

According to this description, the resulting comparison would not, in essence, be a renovation of the Register (as this would go against the new Law), as -among other many differences- register files that were valid when the Census was performed will continue to be so (obviously including the *natural* variations that appeared during the process) after the operation, which can be considered as an additional update source, and only aims to ensure that the register data are a genuine reflection of the reality. In all, this method:

1) As an unavoidable and previous requirement, is perfectly legal

As mentioned previously, article 78 enables the INE to perform operations that control the precision of register data, and article 79 establishes that one of these operations will be performed on the occasion of the creation of the Population censuses. Councils must be notified of the results of these operations. The proposed method fulfils this requirement. When carrying out these operations, the INE must use the register data legally in its power, both to reduce the trouble for the citizens and to increase the effectiveness of the comparison.

Moreover, the modification of the register data will be entered in a specific document, thus avoiding the legal problems that could derive from the direct use of the census questionnaire to collect changes to be performed in the Register.

Finally, the use of a similar procedure in some Autonomous Communities in the 96 Renovation (when a comprehensive Demographic Survey was performed simultaneously) guarantees the fact that the combination of register and census data, if performed with sufficient guarantees and respecting the different essence and purpose of each one, is perfectly legal (specifically, they passed the pertinent inspection performed by the Data Protection Agency).

2) Respects municipal autonomy as regards the register

As aforementioned, modifications proposed by the citizens can only be entered in the INE's copies of the register files once the corresponding Councils confirm, in a subsequent dispatch, that they have been included in their register files, after having performed the necessary verifications.

3) Register data, which given their nature, can change easily over time, can be updated

4) Errors typical of the implementation stage of the new system for register management can be corrected, alongside those existing in the base information (from the 1996 Renovation)

5) The comparison is exhaustive and simultaneous, and this will enable a subsequent verification of the coherence of the proposed residence variations

6) The additional cost of the comparison will be very low, as it is integrated in the census operation

7) It makes it easier for Councils to notify citizens, at least once every five years, of register data (article 69.3 of the Population Regulation). Indeed, the register data that will be printed beforehand on the corresponding sheets, and will be sent, with the actual census questionnaires, to all persons that appear in the Register at that time, will be legally valid, as established by the Register Council, for said purposes, with the corresponding savings for the Councils.

Given the aforementioned terms, there is no doubt that, either from the operational or the legal perspective, the relationship between the 2001 Population Census and the Municipal Register of Inhabitants must appear in the specific form described above.

3. Objectives of the 2001 Censuses

a) To provide a population recount

The Population census determines the number of inhabitants in the State, Autonomous Communities, provinces and the municipalities, as well as in entities and population nuclei. The use of the data from the Municipal Register of Inhabitants (described in the previous chapter) will allow the improvement of the precision of the census population figures.

b) To provide information on the structure of the population

The Population census, as it investigates the geographical, demographical, cultural, economic and social characteristics of the inhabitants, provides a structural image of the population that is used as the source to compile demographic, economic and social policies that, unquestionably, use the human factor as the basic reference.

c) To promote the implementation of a new model for Register management

Improving the precision of the census figures and reducing trouble for citizens are the two main advantages of using the Register in combination with the Censuses. This combined operation also benefits the Register as it will allow the correction of the errors that have appeared since it was carried out and that have not yet been corrected (and sometimes not even noticed) during its everyday use.

d) To act as the basis for demographic studies

The Population census allows us to obtain data that are essential to study the evolution of the population. Similarly, it can also be used to calculate specific rates of the characteristics investigated in the flow statistics. As regards the previous Censuses, the 2001 operation presents the peculiarity of acting as the starting point for the new statistical operation considered in the 2001-2004 National Statistics Plan, known as the *Longitudinal Demographic Analysis,* which aims to accumulate all the statistical information (dully harmonised) that is collected on each household, dwelling, person, using register data as the pivot.

e) To act as a basis for the compilation of sample statistics

The Population and housing censuses have traditionally acted as the framework for sample surveys. On the one hand, they allow us to calculate the parameters needed to guide the sample methodology (for example, the stratification of primary sampling units); on the other, the different, computerised[1], statistical directories can be used for the direct selection of the different statistical units (municipality, section, block, family dwelling, person). The computerisation of the Register means that the most promising mid-term option is to form a framework that combines the permanent updating of the register information with the improved data provided by the Censuses[2].

f) To consider the needs for information for small geographic areas

The reduction established by law, and already implemented in the 1991 Registry renewal, of the information contained until that moment in the municipal registers

[1] This is an important novelty because to date, as previously the agents' notebooks were not computerised, they had to be used as directories, on paper.

[2] This auxiliary information provided by the Censuses (that includes very stable characteristics, like most of those related to the dwelling), will allow a more efficient selection of the last units for observation, which, as occurs with the sample size, will increase the precision of the surveys without increasing the cost.

of inhabitants, that should only contain the data needed strictly for their purpose (i.e. to determine the population resident in each municipality), has given greater relevance to one of the essential functions of the Censuses: to provide statistical information for small geographical areas. This results in maintaining the exhaustive nature of the census exploitation (one of the most highly regarded qualities of the 1991 Censuses) and introducing variables that are specially useful for very fine spatial break downs, that are not contemplated in sampling researches.

g) To recount dwellings, buildings and commercial premises

The Housing Census has traditionally been used to determine the number of dwellings in the State, autonomous communities, provinces, municipalities, entities and population nuclei. On this occasion, the collection of all the census information during a single itinerary allows us to establish the number of buildings and commercial premises for each of the geographical details simultaneously (and even for inferior ones, like blocks, streets or road sections.).

h) To provide information on the characteristics of the dwellings and buildings

The Census provides information on the structure of family dwellings considering aspects such as time of construction, surface and general characteristics, facilities... The simultaneous collection of all the census information will allow the integration of data on the buildings where they are located.

i) To update and standardise the instruments used in the statistical infrastructure

The directories of dwellings and buildings, a-to-z, maps linked to the censuses, are basic infrastructure elements that are renovated and standardised due to the census operation. Consequently, they will become reference instruments for the whole of the Public Administration.

j) To consider international statistical needs

The main international organisations periodically request information from different countries to compile their social and demographic statistics; the Demographic Censuses as usually the main sources consulted.

4. General approach of the 2001 Censuses

All Demographic Censuses, both in different countries and in successive census rounds, are obviously similar in essence. However, this is perfectly compatible with the fact that notable differences appear between the various Censuses, both in terms of time and space. Most differences are caused by the scale of priorities used in each census operation.

Consequently, before going in to further detail, it is necessary to clearly explain the general focus that will be used in the 2001 Censuses, **their identity marks**, compared to previous Censuses or those performed in others countries. This will ensure that the decisions presented in this document are more understandable.

By order of importance, the most relevant is the need for **keeping census workloads at acceptable limits**[1]**,** both for the agents and, most specifically, for the citizens. The advantages of this criterion are plentiful and very necessary; for example:

- Better social acceptance of the Censuses.
- Cost reduction
- Reduction of the periods required to make results available (main requirement that users complained about in previous censuses, which alongside the control of the cost in monetary terms, will substantially increase the performance of the Census operation).

In coordination with this criterion, it is also important to make the **effort as productive as possible.** Specifically, maintaining **the comprehensive nature of all the questions** (the main success of the 1991 Censuses), it is necessary to identify the variables that in 2001 would no longer provide sufficiently useful information and replace them with other new ones, that present a better cost/profit relation.

The availability of the register data beforehand is of great help in this sense, as it provides the four most important variables (sex, date of birth, place of birth and nationality) at a much lower cost (since they are printed beforehand on the register sheets, citizens simply have to confirm them to make them immediately valid for census purposes). Moreover, this advantage is also applicable to certain variables related to migrations, which will not have to be formulated specifically, as they can be obtained from the register.

This provides a new margin for the consideration of new questions that consider relevant and contemporary social concerns. In this sense, the 2001 Censuses includes questions about, for example, place of work and study (potentially useful to improve traffic and parking problems), research of the number of hours worked (vital to analyse part-time work, which is becoming more important in Spain and achieving more social relevance), or especially the innovative question regarding problems in the dwellings and its environment (which deals with issues that are of major concern to the households and could contribute to improve the greater social acceptance of these Censuses, as expected in view of the pilot tests, where it was the most accepted question of all those considered.

[1] The Chart-Summary included in section 8.G, comparing the content proposed with that of the previous Censuses, shows that the number of questions that have been left out or simplified is substantially greater than the number of new questions included.

5. Scope of the 2001 Censuses

Population scope

The **Population census** only includes persons, regardless of their nationality, whose regular address is located in the national territory.

-In order to compare Spanish population figures with those from other countries, and in line with international recommendations, the following are also included:

- Diplomatic personnel and other Spanish civil servants and their families, who are officially posted abroad.

- Spanish personnel in the merchant navy, in fishing boats and air navigation that are outside the Spanish territory on the date of the census.

- Spanish residents who are temporarily working abroad.

- Resident foreigners, although they are temporarily abroad.

As regards the **Housing Census**, the population scope considers dwellings and group establishments. Dwellings are considered to be all venues used for human habitation, that are family dwellings, and those others that, although they are not designed for that purpose, are actually inhabited on the date the Census is performed; these are called Accommodations.

This Census does not include dwellings that are under construction, unless they are inhabited at the time the census is performed or if their completion is pending on certain slight details, although they could already be occupied.

Neither does it include dwellings that are being demolished or are empty because they have been declared in state of ruin.

The list of dwellings is based on the simultaneous list of buildings where they are located, including all buildings used as housing, both as family and group dwellings, as well as buildings conceived for purposes other than housing, except for those conceived exclusively for agricultural production (agriculture or livestock).

The buildings that are considered in the Census only include completed constructions. Compared to previous Censuses, the 2001 operations no longer consider those that are under construction but already have a roof[1]. Buildings that have been demolished totally or partially, but are being reconstructed and have roofs on the date of the census are not considered in the study. Similarly, the Censuses exclude the following:

1. Buildings that are being demolished, and those that are in ruins, uninhabited and with commercial premises that are inactive or empty.

2. Constructions located in squares, sidewalks or leisure areas dedicated to the sale of beverages, tobacco, newspapers...

3. Buildings dedicated exclusively to agricultural production, that are not used simultaneously as family dwellings, group dwellings or for activities other than agricultural production. These buildings are not included in the Censuses because it would involve a disproportionate amount of work and, furthermore, the diversity of the

[1] It is useless to consider these buildings in the Censuses as only one census itinerary is performed. However, they were included in previous Censuses because one month passed between the Buildings Census and the second, final itinerary; this allowed time for the completion of their construction.

climate and of the agriculture and livestock of the country would render them insignificant. This norm is the same as in the **1970, 1980** and **1990** Buildings Censuses.

Agricultural production considers the activities defined in groups 011 and 012 of the **1993 National Classification of Economic Activities (NACE-93):** the cultivation of land (cereals, vegetables, fruit, flowers, etc.) and the breeding of livestock (cows, pigs, poultry, etc.).

However, the operation does include buildings destined to render agricultural services (group 014 of the Classification), as well as those used to store and deposit agricultural and livestock products, when said storage is offered as an independent service, unrelated to agricultural production (group 631 of the NACE-93).

As regards commercial premises, the Census only identifies those located in buildings that are considered appropriate for the census, in other words, those used for all economic activities except agricultural activities. It is important to explain that the notion *economic activity* should be considered in its vastest sense, as it considers all those that are not typical of the household, regardless of whether they are performed with lucrative purposes and even when they do not have a genuinely economic nature (barracks, churches, social clubs for OAPs, etc.).

Geographical scope

The research includes the whole national territory.

Time scope

The counts of the different census units will all refer to a single census date, in this case, **November 1st 2001[1].**

[1] Article 1 of Law 70/1980, December 16th, in the wording envisaged in the additional sixteenth disposition of Law 50/1998, December 30th, establishes that the National Statistics Institute will compose the population and housing censuses in years ending in one with reference to a date comprised between March 1st and 31st. Consequently, the reference date was initially established as May 1st. Nevertheless, subsequently it was transferred to the second part of the year, so that the census budget fell between two budget exercises. Consequently, after the corresponding legal stipulations, November 1st was established as the Census date.

6. Basic census definitions

The most basic census definitions appear hereunder. Compared to previous censuses, certain changes have been implemented to clarify the relationship between different units and concepts. Despite these formal differences, there are only two main variations compared to 1991:

The elimination of the concept *non-resident,* and consequently, of the *de facto population;* and, as an estimate of the *genuine population load* in each municipality, the concept *linked population* has been included as an innovation to the 2001 operation.

The concept household becomes household-dwelling, and no longer requires inhabitants to *share common expenses,* as this did not adapt appropriately to the close relationship between register and census data foreseen for these Censuses.

Population census

Series of operations that compile, summarise, assess, analyse and publish demographic, cultural, economic and social data on all the inhabitants of the country and its political-administrative divisions, referred to a specific moment or period. This operation considers all persons that live in *dwellings,* be they *family dwellings* or *group dwellings.*

The basic unit used in the Population census is the *resident person,* but the identification is not individual, as it is necessary to consider the relationships of coexistence; therefore, the *family,* the *household and* the *family nucleus* also appear as additional basic units.

Housing Census

Series of operations that compile, summarise, assess, analyse and publish data on all the places used for human habitation that have been conceived as such, and list those that were not conceived for that use but are employed for this purpose.

Resident

Individual whose regular residence is located in Spain when the census is performed[1].

The ensemble of residents in a specific political-administrative division is designated the **resident population** (concept totally equivalent to the former *de jure population)* or, simply, **population.**

The census no longer considers *Non-residents*(in other words, persons who are in the Spanish territory when the census is performed but do reside within). Consequently, the concept *de facto population* disappears, alongside the removal of the term non-resident from the Register of inhabitants.

Nevertheless, a new concept has been introduced in this census in order to calculate a better estimate of the *real population load* in each municipality, for example

[1] Replacing the concept inhabitant, used in previous censuses, which, as well as residents, included *non-residents,* in other words, persons who were in the Spanish territory when the census was performed although they did not reside within.

that is an advantage, in this sense, considering the disappearance of the de jure population. It is called **linked population** , and defined as the ensemble of persons that can be considered in the census (i.e. who regularly reside in Spain) that have a regular connection with the municipality in question, because they live, work or study there, or -if it is not their regular residence- because they spend certain periods of time (holidays, public holidays, weekends.) there [1]..

Dwelling

Structurally separate and independent venue that, given how it was constructed, reconstructed, transformed or adapted, is conceived to be inhabited by persons or, even though this is not the case, is used as a person's regular residence. As an exception, dwellings will not include venues that, despite being initially conceived for human habitation, at the time of the census are dedicated totally to other purposes (for example, those used exclusively as commercial premises).

A venue is considered *separate* if it is surrounded by walls, fences, gates..., it is covered by a roof and allows a person, or group of persons, to be isolated from others, in order to prepare and eat food, to sleep and to find shelter from the weather and the environment.

The venue will be considered *independent* if it can be accessed directly from the street or public or private area, either common or individual, or from a staircase, corridor..., that is to say, when the persons in the dwelling can enter and exit it without having to go through a venue occupied by other persons.

In any case, the survey considers the current situation of the venue-dwelling and not the primitive state of the construction. Therefore, the groupings or subdivisions of the dwellings consider as many units as resulted from the transformation processes, as long as they fulfil the aforementioned conditions, and regardless, therefore, of the initial state of the construction.

There are two types of dwellings: *group dwellings* (also known as group establishments) and *family dwellings.* Inside the group of family dwellings, there is a subtype called *accommodation.* The definitions for each of these concepts appear below.

Group dwelling[2]

Dwelling designed to be inhabited by a group of persons subjected to a common authority or scheme that is not based on family ties or specific coexistence schemes. The group dwelling may occupy only part of the building or, most frequently, the whole of the construction.

[1] This definition will clarified via questions regarding place of work or study, availability of a second dwelling, and use made of it. Chapter 8 explains each one.

[2] In this case we have preferred *group dwelling,* as used in the 1981 Census, to stress it responds to the definition of *dwelling,* regardless of whether the whole of the building is dedicated to this purpose or not.

For census purposes, this includes both actual group dwellings (convents, barracks, institution, student halls, workers residences, hospitals, prisons, etc.), and hotels, guest houses and similar establishments.

When there are family dwellings (see next definition) in a group dwelling, which are normally used for the establishment's managerial, administrative or cleaning personnel, these will be considered family dwellings and be included in a different part of the census.

Family dwelling

Dwelling designed to be inhabited by one or several persons, who are generally but not necessarily members of the same family, and do not compose a group, according to the previous definition.

Family dwellings[1] are included in the Housing Census, regardless of whether they are inhabited or not when the census is performed. Conversely, this does not include venues constructed initially to be used as dwellings which are currently used exclusively for other purposes (dwellings that have been transformed to accommodate offices, workshops, warehouses..., which appear in the census as commercial premises).

Although they do not strictly comply with the definition, *accommodations* are also considered family dwellings, and are defined below. In order to distinguish between family dwelling and accommodation, the former will appear alongside the adjective *conventional,* in line with international regulations.

Accommodation

A family dwelling that presents the particular feature of being mobile, semi-permanent or improvised, or a space that was not designed with a residential purpose, although it is used as the residence of one or more persons when the census is performed (therefore, empty accommodations are not included in the census).

Accommodations can be *permanent,* or:

- Semi-permanent dwellings which, are similar to family dwellings in certain aspects, but are only used during a limited period of time (usually under 10 years).

- Certain premises conceived as dwellings that are constructed without pillars and using waste material (tins, boxes...): huts or shacks...

- Others premises, that were not conceived as dwellings, and that have not been refurbished or reformed to be used as such, but that are used as a residence by the people living within; for example, areas located in stables, barns, windmills, garages, warehouses, commercial premises, as well as caves and other natural shelters that have been fitted out to live in them.

[1] The adjective *family* does not imply that the inhabitants of the dwelling have to related. It would be more precise to use an adjective related to the *household,* instead of to the *family,* but the census maintains the traditional denomination so that respondents will not think this concept has been changed, as this is not the case.

or *mobile,* in other words, those constructed to be transported or that compose a mobile venue, and are used as a residence for one or several persons, such as tents, boats, yachts, trailers... Sections reserved for passengers in group means of transport (boats, trains...) are not mobile accommodations.

Household

Group of persons resident in the same family dwelling[1].

Family

Group of persons resident in the same family dwelling (therefore composing a household) that are related, by blood ties or by law, regardless of the degree[2].

The differences between household and family are:

a) The household can be composed by a single person, whilst the family has to have at least, two members.

b) The members of a multi-person household do not have to be related, whilst the members of a family do.

Family nucleus

Intermediate hierarchical unit between the resident and the family. The notion of the family nucleus corresponds to a restricted conception of the family, that is limited to the closest degrees of kinship. There are four types of family nuclei:

a) Married couple or couple without children.

b) Married couple or couple with one or more children.

c) Father with one or more children.

d) Mother with one or more children.

To be part of the nucleus, a child must be single and not have a partner[3]. So as to determine the nuclei, the following aspects should be considered:

[1] Compared to 1991, the 2001 Census has removed the condition that established they had to *share certain expenses.* It was hard to apply this condition in practice in the Censuses, especially as they are based on Register data, which do not include this option. The number of dwellings considered to accommodate more than one household was very small, and furthermore, the comparison of the practical application of this definition between the 1991 Census and the Sociodemographic Survey proved to be too arbitrary (often, the Census considered two households, whilst the Survey only considered one, and vice versa).

Although from a sociological point of view it would have been convenient to limit the notion of kinship, in view of the definition of *family* it is easier to work with a concept that is as vast as possible and that, on the other hand, does not distort reality.

[3] However, economic dependence is not required: the persons simply have to reside in the same dwelling as the parents

- The father (mother)-child relationship has preference over the child-father (mother) relationship;
in other words, if a single child without a partner is also the father of a single child without a partner, both form a type c) nucleus and, therefore, the former, although he is single and does not have a partner is not part of his parents' nucleus.

- The relationship between a couple has preference over the child-father (mother) relationship.

Commercial premises

Venues that are structurally separated and independent (in the same sense used to define dwellings) that are not used exclusively as family dwellings and in which the economic activities of a company or institution may be carried out. The premises should be situated in a building, occupying it totally or partially.

Economic activity means any production activity resulting from a concurrence of resources (equipment, labour, manufacturing process, products), that lead to the creation of goods or the rendering of services. Activities can be profit- or non-profit making.

A **company** is any legally defined organisation, with independent accounting, subordinated to a governing activity, which can be a legal or physical person, and created with a view to perform in one or several places one or several activities involving the production of goods or the rendering of services.

Some examples of commercial premises:

- Open-plan venues in the ground floors of the buildings that are under construction or have been constructed recently, where divisions have not yet been made for rent or sale, will be considered as a single venue.

- A block of buildings, as defined below, will be considered as a single venue if the economic activities performed within are carried out by a single company.

- As regards the permanent stands at markets, each one will be considered a venue, although they will be included jointly in the census as a complex of commercial premises (see subsequent definition) located in the market building.

- In buildings with a group dwelling, either hotel establishments or other types of establishments, such as hospitals, barracks, prisons, convents,... there should be at least one commercial premise, where the activity associated to to the aforementioned group dwelling is performed. If there is more than one group dwelling in the building, each of their corresponding premises will be considered individually.

- When in the same building (or building complex) multiple services are rendered performed by the same or by different Public Administrations, the census will include as many venues (or series of venues) as there are units with autonomy regarding the management of personnel, authorisation, that provide services in said location.

- A venue that has a single access from outside may be considered in the census as a family dwelling and a premise, if part is used as a dwelling and part for performing economic activities, as long as they can be identified from the outside and the public can access them easily.

Examples of venues performing economic activity that **not considered commercial premises:**

- Mobile units or units without a permanent installation (travelling sales persons, stands at fairs) and those located in areas that cannot be considered buildings (open air activities, in provisional installations.).

- Those located in subterranean passages (for example, in underground stations, areas used to cross large avenues in cities, others premises located under public land not below buildings...), as well as those located in squares, pavements or outside leisure areas or any other venue not included in the definition of building (kiosks or stands selling beverages, newspapers...). However, it does include premises located in the interior areas of buildings.

- Premises that just serve a building or building complex exclusively, and those that accommodate boilers, air conditioning machinery, machinery for lifts and the like.

- Garages for private parking, that are not part of the economic activity of a company. However, it does include garages operated for a financial profit by a company, and public car parks located in buildings.

- Small venues used by owners to leave personal belongings or private parking areas, that do not yield economic profit even though they are located in a building that is not the dwelling where the owner lives.

- Economic activities carried out inside family dwellings that cannot be identified from the outside and the public cannot access freely, or when one or several areas of the dwelling are not used exclusively for the economic activity in question.

Public Administrations are analysed separately since it is difficult to apply the definition of company in this sector, and also of the dependence of the premises. For census purposes, the following will be considered companies:

- Each Ministry, Autonomous Community Government Departments, Councils, Inter-island councils, Association of municipalities or Councils.

- Superior institutional units higher of the Legislative Power and the Judiciary (Legislative assemblies, High courts.).

- Superior institutional units higher of the Executive Power not organically included in any of the previous section, such as Governing Councils, Vice-Presidencies...

- Institutional units of the Social Security System (institutes or management organs), of the State and the Autonomous Communities.

- Each Autonomous Administrative Institution.

Complex of premises

Ensemble of premises of the same type, located in the same building, that share at least one common access from the street.

Only the following 4 primary categories of question D.2 are considered to determine if all the premises are of the same type, in other words: public facility, commercial premises (including offices and other services), industrial premises, agricultural premises.

The most characteristic example are shopping centres. Other examples are ensembles of offices in a building used for said purpose, or commercial galleries located on the ground floor of certain buildings.

However the following are not considered to be a complex of premises, but simply one: a large warehouse, a hypermarket, a supermarket, as in these cases there is no physical separation between the different stands where articles are sold in the venue.

Each complex of premises appears in the census as a single census unit, although the number of venues contained is included.

Space

Operative unit used in the census agent's Itinerary Notebook corresponding, depending on the use, to a dwelling or to commercial premises. Specifically, in the Itinerary Notebook each space is classified depending on whether it is a: family dwelling (making a distinction between conventional family dwelling and accommodation), group dwelling, active premises, inactive premises.

Building

Permanent construction, separate and independent, that has been designed to be used as a dwelling or for agricultural purposes, for industrial issues, to render services or, in general, to develop any kind of activity (administrative, commercial, industrial, cultural.).

A construction is *permanent* if it has been conceived and constructed to answer needs that have an indefinite duration and that, therefore, will be in the same place for over ten years.

It is *separate* if it is limited by façades or party walls and covered by a roof.

It is *independent* if it can be accessed directly from the street or from public or private grounds.

A building can be accessed via a main or independent entrance, or by secondary or accessory entrances.

In the case of constructions composed by blocks or terraced buildings, or buildings that are enclosed by common fencing, the census will consider as many buildings as main, independent entrances as there are. It is important that they are main and independent entrances, although this does not exclude the fact that there may be secondary or accessory entrances to one same building.

It is important to note that the building is defined in terms of the independent nature of the access; therefore, a homogeneous construction will compose as many buildings as main and independent entrances there are.

The independence of the access refers to the impossibility of accessing dwellings other than those corresponding to the main entrance. Communications via the garage, terraces or common lumber rooms, as well as exceptional communications that can be installed for fire protection, or in case the lift breaks down are excluded.

If a construction has a single entrance and there are several different staircases that provide access to as many groups of dwellings that are only communicated via ground floor, it will be considered a single building.

Constructions with entrances at different levels through two different streets, with buildings communicated via a certain level, compose a single building.

The following are not considered buildings: constructions located in squares, underground areas, pavements or leisure areas, that sell beverages, tobacco and newspapers, such as kiosks.

Building complex

Group of buildings located in a limited area (that may or may not be enclosed) that are used exclusively or mainly either to perform the different stages, operations or needs of the economic activity of a single organism, entity or company, or as a group dwelling.

A building complex is not an group of buildings that is used mainly or exclusively as a family dwelling.

For census purposes, each building complex will be considered as one unit.

7. Collection of census information

This section, which is one of the most important of the census operation, also includes certain innovations that will ensure the goals set out for the Censuses, listed in the previous section, are accomplished.

Census questionnaires

Consequently, as regards the design of the questionnaires, a system has been devised to allow the perfect combination between register data and the rest of the census information, considering the different nature of both operations and aiming to bother citizens as little as possible (specifically, by not asking questions about information that is already available).

For legal security reasons, the option that from a strictly operative perspective would seem more effective was rejected (i.e. a single document, the census document, that also included the necessary modifications of the register data). This left three options:

a) Register document in which (only) the questions that are common to the censuses are automatically copied onto the actual census questionnaire: very operative, but the use of self-copy paper imposes strict restrictions regarding design and the subsequent computerisation.

b) Two separate questionnaires: one with register data printed beforehand (to be updated) and the other (the census questionnaire) with all the variables, even those same register data printed beforehand: less operative but highlights the different nature of the information they collect.

c) Two separate and complementary questionnaires: one with register data printed beforehand (to be updated) and the other (the census questionnaire) without the census data already included in the Register (sex, date and place of birth and nationality), identified via a code with the corresponding register, to be able to *recover* that information for the census subsequently[1](once they have been updated, if necessary).

This third model (used by some Communities in their demographic statistics linked to the Renovation of the Register in 1996, for example Madrid, Canarias or Galicia; which means it has passed the supervision of the Data Protection Agency), is, considering the pros and cons, the most appropriate one:

• It is less cumbersome for the citizens who (as occurred in option a)) only have to answer (or check) each question once.

• It increases the separation (as occurs in option b)) between the information provided by both documents, stressing the idea that they pursue different objectives and are not exchangeable.

• This allows maximum flexibility in the selection of the design of the rest of the census
documentation and the method used to capture the whole of the information.

There are also three options to choose from to select the model of the actual census questionnaire:

[1]This transfer of information (from the Register to the Census) is perfectly legal; however, the transfer of information in the other direction is not. Actually, the incorporation of census data in the local registers was the cause of the notorious failure of the German census performed in the 80s, which the German justice declared unconstitutional. Hence the relevance of the register data appearing on a specific document, without being tempted, however practical and useful it may seem, to use one same document for all four variables that are common to the Census and the Register.

1) Booklet-like questionnaire, similar to the one used in the 1991 Population census: persons are listed on the header of a page and questions appear on the left of the successive pages.

2) Questionnaire similar to the one used in the Register (or the 1981 Census), where persons are listed on the left of the page and questions appear in the header.

3) A questionnaire in which each individual uses separate sheets (model that is gaining relevance in a great deal of countries, such as USA, Australia, France and Great Britain, for example). The third model cuts costs when the capture is based on scanning the image of the questionnaires beforehand, since the process only scans pages that contain information on a person. Another advantage of this model is that it reduces errors, which are very frequent in the censuses, as a consequence of changing the perspective many different times (one single person usually completes the whole questionnaire); using one page for each household member, the respondent would only have to put him or herself in the place of each other person once, and this would also encourage each person to answer their own data, thus improving the precision and the sensation of privacy.

Considering the pros and cons of each of these models, the most appropriate design (which has been verified successfully in the two pilot tests) is a combination of the last two options: **joint *dwelling questionnaires*** (with single response questions for each household) **and *household questionnaires*** (with family ties, that are answered more precisely in a questionnaire including all members, and the rest of the universal personal data questions, except for the four variables that are common to the Census and the Register, which will only appear on the register sheets), and as many ***individual questionnaires*** as persons between 16 and 64 years old reside in each dwelling.

This option (similar to the one used in France, Austria and New Zealand, for example) presents good qualities compared to the essential criteria used to select the best model for the questionnaire:

• the integration of census and register data (specifically, printing the latter on the census documentation beforehand)

• the need for bilingual questionnaires in Autonomous Communities with their own language

• the preservation of privacy in each dwelling (thanks to individual questionnaires)

• the reduction of response errors, both in individual questionnaires and the ones relating to family ties

• reduction of the amount of pages to scan

In fact, in order to reduce the total amount of paper to scan, and more importantly, to reduce the work load for the *citizens* , the only variables that will appear on the individual questionnaires will be connected to economic or academic activity. Questions that have a more universal nature will be moved on to the questionnaire that focuses on the household as a whole. Consequently, large groups of persons no longer have to complete the individual questionnaire (those under 16 years of age, retired persons..., and in general, everybody who does not work or study). This strategy more or less halves the number of individual questionnaires, significantly cutting costs and the deadlines applied to the census stages, that are as critical as the printing, distributing and processing the census documentation.

The remaining census data (building information, postal addresses...) will be included in the itinerary notebooks (also known as *agent notebooks)* , which will therefore include the data printed beforehand, instead of being blank like the previous ones. This will ensure information is processed more efficiently, quickly and economically. In the 1996 Demographic Statistics, certain Communities already tried this method successfully. However, the 1991 operation is the first time it will be implemented in a Census at a national level.

Dispatch of the Census documentation

Another immediate advantage of the availability of the register files beforehand is the possible use of the postal service as an alternative, or at least to complement, the traditional method used to dispatch census documentation (whereby the census agents themselves leave the questionnaires in each dwelling). This method, tested in the first pilot study, presents the following advantages:

• the census agent can focus more on the collection and initial filtering of the information, thus improving its quality.

• the personalisation of register data requires each dwelling to receive exact documentation; this task, which is more delicate than the previous one (in 1991 agents simply gave each household blank census questionnaires), should be performed by experienced persons.

• the majority of households will have the documentation when the census is performed, thus avoiding the delays that usually appear when the census agent has to distribute them dwelling by dwelling; with two other important advantages: increased precision of the data (especially those that depend on the exactness of the reference period) and the substantial reduction of the periods for the collection of information.

• can be applied selectively: when appropriate, using the classical method in other places (for example rural nuclei, where a high percentage of the questionnaires are completed by the agent him or herself during the initial contact with the household).

• although it would be the first time it was used in Spanish censuses, this method has been
used successfully in other countries.

The most important disadvantage of this method, which was identified during the first test, is the fact that, in some cases, too much time can pass from the moment when each household receives the questionnaire and the moment the agent collects it (this sometimes leads to personalised questionnaires being lost, which then have to be replaced with blank questionnaires). Therefore, the second test (carried out between September and December 2000), tried a different method whereby the same person distributed and collected the questionnaires as this coordinated the rhythm of distribution and collection. The drastic reduction in the number of personalised questionnaires lost has demonstrated that this method should be used in the final Census operation.

Collection methods

As regards the collection, the main method will still be the Census agent. Consequently, agents can perform certain key verifications before leaving the dwelling and maximise the complete itinerary around the section, which should always be

performed anyway (to detect dwellings not included in the base directories, to check that dwellings in which no persons are registered are actually not occupied...).

Nevertheless, technological developments have allowed the creation of two complementary methods for the collection of information**(telephone and the Internet),** albeit only to facilitate the response of groups that, given their occupation or habits, are harder to contact (single-person households or young couples in which both persons work).

Both resources share two major advantages (as well as the aforementioned fact of reaching groups that are hard to contact in person): they are **cheaper,** in relative terms, than the classical method (among other things because the information is captured automatically, thus reducing the capture process which has to be performed for paper questionnaires) and the information is of **greater quality** (thanks to the implementation of interactive quality controls, which are particularly useful for variables that require automatic coding).

As regards **telephonic responses,** it is important to note that there will always be a telephone assistance service (based on and improving the 1991 experience). Therefore, the actual dilemma was to decide whether that service should, as an additional function, envisage the possibility of collecting telephonic responses (for those citizens who request this process; although this option could also be used to cover certain types of non-response). The additional economic cost of using this collection method would consequently be less, as the costs for the general telephone service are already covered. The main problem this option presents is that it requires a very close coordination with the information collected by the agent, to avoid duplicates or gaps.

As regards **collection via the Internet,** the main problem is the lack of absolute security in the communications. Although census information is hardly conflictive from the point of view of the protection of privacy and, furthermore, as it can be sent as anonymous and encrypted information, it is important to consider the cost of somebody intercepting it along the way, simply to hamper the process. There are already resources (*electronic signatures*, for example) that guarantee the integrity of the information sent via the Web, but the novelty of the implementation of this option still restricts the possibility of completing the questionnaires via the Internet.

In any case, this collection method should not be considered as a general alternative for the whole of the population, but as a complementary response method, aimed at specific layers of the population, who were given the possibility of taking part in this census collaboration and not having to wait passively for the census agent to visit them at a suitable time. This could, consequently, reduce the, relatively important, expenses generated by queues, as well as transmitting a modern image of the Administration, that strives to make it as easy as possibly for citizens to fulfil their obligations. Another very important aspect to consider is the promotion of the use of new technologies in Public Administrations, in order to be more accessible to the citizens, and in this context, the possibility of completing the Censuses via the Internet would be an example with major public repercussion.

The main disadvantage of both collection methods, especially by telephone (as it has a much greater target population), is the generation of a new requirement: **appropriate coordination with the main method,** which is still the Census agent.

After studying the possible solutions and having found a reliable, and simple, security mechanism, it has been established to allow citizens to **complete the census questionnaires via the Internet**.[1] Thus, Spain has become the fourth country in the world (after United States, Singapore and Switzerland) to use this type of response in a census.

Organising the collection of census information

The collection of the census information will be coordinated at a provincial level, appointing a Provincial Delegate from the National Statistics Institute as the Provincial Inspector.

Each province will be divided into regions so as to improve the advice and coordination of the collection, as well as to facilitate inspection tasks.

The resulting regions will be supervised by Regional Inspectors, establishing one municipality as the head of the region where a Regional Office will be located alongside a centre that controls and monitors all the tasks performed in said region.

There will be complementary Area Offices for each region, which will be the place where the personnel in charge of the collection of the information will work, meet and exchange documentation.

In each municipality, the National Statistics Institute will appoint, after nomination by the corresponding Town council, a person from this institution to act as the Local Advisor, who will advise the INE as regards the delimitation and content of the sections and will provide assistance when solving local problems.

Collection of the information: period and personnel

The tasks concerning the collection of the information onsite will have an estimated duration of two months. There will be a deadline for the completion of questionnaires via the Internet.

The personnel needed to collect the information and the basic tasks linked to this operation will be distributed in the categories of Census Agent, Group Supervisor, Regional Supervisor and Regional Assistant, who will all act under the direction of the Regional and Provincial Inspectors.

The **Census Agents** will collect the information in the sections of the municipal areas and will filter the questionnaires obtained. In order to do so, they will follow an organised and thorough itinerary, using the Itinerary Notebook, checking the limits and visiting each and every one of the buildings to obtain their corresponding characteristics. Once inside the buildings they will visit each of the spaces (dwellings and/or premises) located inside and will distribute the census questionnaires in the appropriate dwellings. They will also collect them once completed and assist in the process of filling them in when necessary.

The **Group Supervisors** prepare and distribute the documentation to the Agents they are in charge of and also control, monitor and inspect the work they perform and filter the questionnaires they collect.

[1] Register data can also be modified via the Internet but, as these are administrative data and, therefore, require more legal security, in these cases, it will be necessary to use an electronic signature, similar to that used to send the Income Tax via the Internet.

The **Regional Supervisors** act under the orders of the Regional Inspector and also collaborate in training the personnel that will work in the region, they are in charge of the organisation, monitoring and inspection of the tasks performed by the personnel under their management and control the recording process that will be performed by the Regional Assistants.

The **Regional Assistants** will support the Regional Supervisor's office work tasks, especially in terms of recording the data required to ensure the operation of the application for monitoring and controlling the tasks.

How and where are persons considered for the Census?

Given that the Census includes all persons, Spanish or foreign, that have a permanent residence in the Spanish territory on the reference date, persons are interviewed for the census in the place where they habitually reside. As the place where they are registered usually coincides with the place where they live, **personalised** census questionnaires will be created using the register files, as this will save time for the persons completing them given that, in the case of the Register Data sheet, they simply have to check that the information is correct.

Nevertheless, there are a few cases beyond this norm:

1) When none of the persons that appear printed on the personalised questionnaires reside in the dwelling, the members will be given blank questionnaires (Register Information Sheet, Dwelling Questionnaire, Household Questionnaire and Individual Questionnaires).

2) When there is no information printed beforehand for a dwelling and the persons residing within live there regularly and wish to register there, they will be given blank questionnaires (Register Information Sheet, Dwelling Questionnaire, Household Questionnaire and Individual Questionnaires).

A single itinerary: November 2001

As regards the ideal number of thorough itineraries performed to create the series of Demographic Censuses, initially the 2001 operation was going to use the classic solution, in other words, **two itineraries.**

The first would have been carried out in spring 2000, and its main and almost sole objective would have been to act as a *Pre-Census,* to complete the directories of buildings, dwellings and premises that would be printed beforehand on the 2001 itinerary notebooks. Most of the information (even the main features of the buildings) would have been collected in any case in which there were a second and final itinerary (which is now the only one), given the major operative advantages of having all the statistical information on the units of observation used in the Census referring to the same moment in time.

This first itinerary aimed to create pre-directories of buildings, dwellings and premises by standardising and comparing register files (including *main* dwellings, i.e. with residents)

and cadastral files (that also included dwellings that are not main residences and premises).

After checking that this cross of administrative records (both of which can be used legally for statistical purposes) will provide satisfactory results, it was decided to **eliminate the first census itinerary that had been planned initially:** the directories of what is now the single itinerary (November 2001) will be created directly from the standardisation, filtering and verification of the register and cadastre data, with the consequent reduction of expenses (about six thousand million pesetas) and of resources, which have been used more efficiently in the preparation of the 2001 Population and Housing Censuses with the maximum guarantees.

In all, the 2000 Buildings and Premises Censuses are performed via an operation consisting in crossing administrative records (Register and Cadastre) to create directories for the, single, census itinerary carried out in November 2001. Then, as established, information will be collected on buildings (to enable their association with persons, households and dwellings) and premises[1].

This approach, alongside the maximisation of register data to be used in the Population Census (as described in chapter 2), makes the 2001 Spanish Census enter the category of *Censuses based completely on administrative records,* only behind the Nordic countries, that are the pioneers in this issue.

Pilot tests of the Census operation

A census test was carried out in September 1999, to verify the appropriate operation of the many innovations planned (information printed beforehand on the questionnaires and Itinerary Notebooks, dispatch by mail, scanning...). The test was performed in 25 census sections, distributed in five provinces selected intentionally in an attempt to cover all the different existing types of habitats.

The main outcome was that the general approach for the Censuses seems appropriate and that, in general, the most innovative aspects are feasible and profitable. It is important to refer specifically to printing the information beforehand on the census questionnaires, which is one of the most critical aspects of the census design, which has had to be given a great deal of attention.

The test has also been used, mainly via a *opinion questionnaire* that was sent simultaneously to the selected households, to complete adjusting the wording of certain questions and, furthermore, to decide the inclusion of certain questions which people were hesitant about in the draft project.

A second test was performed in September[2] (this time with a wider selection: 34 sections), to test, among other improvements, the modifications in the questionnaires and in the distribution and collection methods that, in view of the results of the first test, have finally been included.

[1] This is why this project, although it refers specifically to the Population and Dwellings Censuses, also includes definitions and questions referring to buildings and premises.

[2] This is the first time in the history of Spanish censuses that two pilot tests have been performed before a Census operation, which should reduce the amount and seriousness of unforeseen events which obviously appear in logistic operations of this size.

8. Detailed explanation of the content of the Census

Before this Project was performed, the draft was widely disseminated (even on the Internet), which, compared to other previous operations (when it was practically a draft of the project) focused specifically on stimulating a debate on the content of the census, analysing each of the questions in detail, even some that, at least initially, were not considered appropriate.

Thus, the users of the census were informed of the arguments that support not only the exclusion or inclusion of a certain question, but also in many cases, why a question is formulated in a specific way and not in another. This allowed them to provide new lines of argument and, consequently, contribute effectively to creating a census content that is as useful as possible and agreed by consensus.

In this way, the Content of the census that is detailed hereunder has been achieved after simultaneously studying all the observations received, and extracting conclusions from the two pilot tests, especially from the one performed in 1999.

Requirements a variable must meet to be included in the Censuses

- **It must be easy to understand**

Most of the census questionnaires are filled out by the respondent: there is no interviewer (in this case, the Census agent) that formulates the questions, clarifying them as necessary. Moreover, the census questionnaires are sent to ALL the citizens of the country.

Therefore, however interesting a question is, it will not be included in the Censuses if it is not simple.

- **It should not be offensive**

It is important to avoid the introduction of questions that some citizens could consider an invasion of their privacy.

Nevertheless, this criterion is not as easy as the previous one: in the 1991 censuses, one of the questions that raised most suspicion was *number of lavatories; however*, many countries included questions on*religion, race, health, trade union membership or income*with very good results.

In any case, it is important to consider this aspect and assess it in terms of the environment in which each census operation is performed.

- **All census questions must meet the requirements for statistical information which must be CLEAR, RELEVANT AND NOT COVERED APPROPRIATELY ELSEWHERE**

Each additional question introduced in a census questionnaire entails an added cost, both in strictly financial terms, and in the deadlines for dissemination, in terms of the burden for citizens, the greater difficult to design and control census procedures...

Therefore, the census should not include variables if their usefulness cannot be specified clearly, if the interest is too marginal or if it is considered appropriately in another investigation (i.e., sample surveys focusing on households such as the Active Population Survey(APS), the Household Budget Continuous Survey (HBCS), the 1998 Fertility Survey, the 1999 Disabilities, Impairments and State of Health,

EU Household Panels.). The Census should not include variables that are experiencing a boom at the time of the operation (for example, Internet access): regardless of how much the deadlines are reduced, as almost two years pass between the collection and the dissemination, the information on these variables would be totally outdated and this would reduce their usefulness.

• **There must be clear need for thoroughness when researching the variable in question**

There may be gaps in the country's statistical information which, given the relevance, should be covered as soon as possible, but do not require a thorough investigation. In these cases, sampling operations should be used, leaving Censuses for the features that really require information from all persons, dwellings, buildings...

B.- Characteristics of the persons

B.1 SEX AND DATE OF BIRTH

a) **Usefulness**

• Essential for estimates and population projections.

• Very useful for planning and monitoring social policies (pensions, healthcare or education expenses).

• Essential in any demographic study, either as the object of the investigation or as the classification variables.

b) **Collection method**[1]

Printed beforehand on the register sheets.

They should only be answered explicitly by persons who are new to the register, or if any of the information is incorrect.

The data that are already available (in other words, the information that does not refer to new inscriptions or corrections) are taken directly from the register files and are associated, via a one-to-one identification, to the rest of the census information for each person. In this process, as generally occurs in all operations that combine register and census data, measures will be taken to strengthen and safeguard confidentiality, also considering the different nature of the information (chapter seven focuses exclusively on the issue of protecting the confidentiality of the information used in a census operation, placing special attention on register data, which are more vulnerable given their nominal nature).

Precisely to facilitate the subsequent association between all register data that are common to the Censuses and the rest of census data, the date of birth

[1]The census information will be divided into five documents that are complementary and are connected to one another: the dwelling questionnaire, the register sheet printed beforehand, the household questionnaire (questions regarding the household and individual questions with a universal nature, like marital status), the individual questionnaire (only for persons aged 16 years old or older, who work or study) and itinerary notebooks with information printed beforehand (identification of *gaps,* either dwellings, commercial premises, and data on the buildings). For further details, see chapter four of this project.

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is also printed beforehand on the household questionnaire. Thus, persons can be included in both forms, and the census agents can check that the order is the same, without having to print (or request) the complete name[1] in the census questionnaire, thus improving the subjective sensation of the protection of privacy.

c)**Detailed formulation**

Sex

1 □ Male

6 □ Female

Date of birth

DAY	**MONTH**	**YEAR**
DD	DD	DDDD

B.2 PLACE OF BIRTH

a) **Usefulness**

• Comparing this fact with the place of residence provides very valuable information, in the long term, regarding the global balance of migration movements.

• From an international scope, it is essential to study the living conditions and the level of integration of immigrants from other countries.

• It is also very useful to compare with the nationality variable.

b) **Collection method**

As the information is printed on the register sheets beforehand, respondents only have to answer if they find a mistake or require a new inscription. These explicit answers will subsequently be coded, regardless of whether they are province-municipality pairs or literal country data.

c) **Detailed formulation**

So as to maximise the space on the Register information sheet, the municipality or country literals on the one hand, and the province literals (only for municipalities), on the other, will be collected directly (without precoded variables):

Place of birth:

Municipality (or country)

DDDDDDDDDDD.
DDDDDDDDDDD

Province

[1]Simply the name and the initials of the surnames. These data, as well as the date of birth, will identify each of the residents living in the dwelling.

B.3 NATIONALITY

a) **Usefulness**

• Essential for planning immigration policies.

• Needed for a large amount of demographic studies where nationality is the basic research or classification variable.

b) **Collection method**

Printed beforehand on the register sheets; although there will be a scarce number of explicit answers, the data must be extremely precise (since this is administrative information); therefore some kind of onsite filtering should be carried out onsite (consequently, when the literal is not good quality, there will be time to go back and improve it).

c) **Detailed formulation**

This will be the formulation for new inscriptions:

Country of nationality:

1 □ Spain

2 □ Another Country:

DDDDDDDDDDD

These four questions, (alongside academic qualification, converted into level of studies, which also appears in the Register) **will be the only ones asked to persons resident in group establishments** (this decision is justified thoroughly in Annex II).

B.4

a) **Usefulness**

• Basic classification, or research, variable in a vast amount of demographic studies.

• In the *de jure* version (as proposed), it is needed to assess a vast amount of social policies.

b) **Collection method**

In the household-dwelling questionnaire; as it is a universal question, it should not be included in the individual questionnaire, since it would then have to be sent to all residents (thus countering the major benefit obtained by reducing the number of individual questionnaires, both in terms of deadlines, costs and social acceptance).

c) **Detailed formulation**

Marital status

(please indicate your legal situation, regardless of whether it corresponds with your de facto situation)

1 □ Single

2 □ Married

3 □ Widowed

4 □ Separated

5 □ Divorced

B.5 RELATIONSHIP WITH PERSON 1

a) **Usefulness**

Needed to establish the composition of households and families, useful for the formulation or monitoring of a plethora of social policies, as well as a variety of sociodemographic investigations.

b) **Collection method**

In the household questionnaire, as all household members should be listed. The person that appears in the first place of the questionnaire obviously does not have to answer it.

In terms of the type of variable, after considering several possibilities, the operation has chosen the simplest one for citizens to answer, which also facilitates the design of the back of the household questionnaire, which, given its matrix structure, has been the most difficult by far.

c) **Clarifications regarding the definitions**

The element called main person in the 1991 Census, will be called *person* 1 in the 2001 Census and will refer directly to the person that appears in the first place on the register sheet. This avoids the typical confusion regarding who is the *main* person in each household. In order to make it easier to complete the section dedicated to family ties, register files will be reordered beforehand so that in each dwelling the most appropriate person always appears in the first place [1]. In cases where, in view of the register information, queries may arise when forming family nuclei, separate envelopes will be generated for certain subgroups of residents in the dwelling; consequently, there will be as many persons 1 as envelopes there are in the house, and the information on family ties will be collected in greater detail.

d) **Detailed formulation**

Relationship with person 1

2 □ Spouse or partner

3 □ Son/daughter, son-/daughter-in-law

4 □ Brother/sister, brother-/sister-in-law

[1] It was not possible to perform this reordering process in the test and the person that appeared in the first place in each dwelling was listed as nº1; some households complained, for example, about a minor child appearing in the first place.

5 □ Father, mother, father-/mother-in-law

6 □ Other Relative (nephew/niece, uncle/aunt, cousin).

7 □ Not related

B.6 PLACE OF RESIDENCE TEN YEARS AGO

a) **Usefulness**

• Allows the estimate of migration movements in the intercensus period; this made it easier to adjust population estimates to both census figures.

• Essential for demographic investigations that study migration movements (preferably in combination with an *open* migration question, like the one included in the next point)

b) **Collection method**

In the Household-dwelling questionnaire, since it is a universal question, via a combination of a precoded variable and geographic literals.

c) **Additional clarifications regarding the definition**

It was important to clarify whether it was suitable to separate the categories in the same address and in another address in the same municipality, to measure intramunicipal migrations as well. Finally, given its importance and since comparing information with data from ten years before is not very useful, given the long time span, it was decided to include a specific question (*year of occupation of the dwelling),* which is analysed further on.

d) **Detailed formulation**

Where did you live on 1 March 1991?

1 □ In this municipality (or had not been born)

2 □ In another municipality or country:

DDDDDDDDDDD
DDDDDDDDDDD

Province *(only if the respondent wrote a municipality):*

DDDDDDDDDDD

B.7 PLACE OF RESIDENCE 1 YEAR AGO

a) **Usefulness**

Contributes to a more thorough analysis of migrations, since the measurement focuses on the census moment.

b) **Collection method**

As a by-product of the management of the register, comparing the place of residence of each resident on 1-11-2001 and one year before. It is important

to note that most of the register data will also contain this information, since one of the basic register data, in these cases, is the place of origin, which will allow the persons to be located in base register files; finally, the next question, relating to the year of arrival to the municipality, will complete this information for residual cases.

This comparison can also be applied with respect to other reference dates, for example, the moment of the implementation of the Continuous register or one year after the census; this channel can cover a period of up to four years (this is another reason that favours a longer period, ten years, for the previous question).

c)**Detailed formulation**

Since it is not a direct census question, this section requires no clarifications.

B.8 YEAR OF ARRIVAL AND PLACE OF ORIGIN

a) **Usefulness**

The *year of arrival* allows the determination of how long each resident has been in the area. In general, both questions can be considered a version of *last migration,* focused from a territorial perspective instead from a time-based one.

At first, the operation only considered requesting information on the year of arrival *to the municipality.* Nevertheless, in view of the recent increase of the foreign population (which is specially significant in relative terms), and the growing flow of Spaniards residents abroad that return to Spain, a question has been included about the year of arrival to Spain and to the Autonomous Community.

b) **Collection method**

A single question, with a mixed nature (date + precoded subvariable + literals), in the Household-dwelling questionnaire.

c) **Detailed formulation**

(Even if this means since you were born) Since which year have you resided in :

Spain

this Autonomous Community |_ ||_ ||_ ||_ |

this municipality ..... | _ || _ || _ || _ |

If you used to live in another municipality or country, please note it down:

DDDDDDDDDDD
DDDDDDDDDDD

B.9 LEVEL OF STUDIES

a) **Usefulness**

Essential for planning and monitoring educational policies, measuring the *stock* of human capital and the connection between training and activity.

b) **Collection method**

In the household-dwelling questionnaire, so that respondents do not have to complete individual questionnaires for this question.

c) **Clarifications regarding the definition**

A great amount of thought has been given to the group that have to this question.

In the 1991 Census, this question was devised for persons aged 10 years old or more; given that education is obligatory until students are 16 years old and that the most significant level of training that appears among persons who have completed their obligatory formative cycle, that limit has been extended to 16 years old, which will also be used for studies in progress and for economic variables (occupation, activity).

Nevertheless, children between 0 and 15 years old, will be asked the most relevant question for the population of this age, whether or not they receive schooling, using the question, *Relation with activity,* which is described further on.

d) **Detailed formulation**

Highest level of studies completed:

1 □ Cannot read or write

2 □ Can read and write but went to school for less than 5 years

3 □ Went to school for 5 years or more without completing GBE, OSE or Elementary Post-Secondary Education

4 □ Completed Elementary Post-Secondary Education, GBE or OSE *(School Graduate)*

5 □ Advanced Post-Secondary Education, BUP (General Upper Secondary Education Certificate), LOGSE Post-Secondary Education, COU (Post-secondary non-higher education), PREU (Pre-University Course)

6 □ VTI, intermediate VT, Industrial Technician or equivalent

7 □ VTII, advanced VT, Industrial Mastery or equivalent

8 □ Diploma degree, Architecture or Technical engineering, 3 academic years passed of a 5 year degree, Architecture or Engineering

9 □ Architecture, Engineering, University degree or equivalent

10 Ph. D

B.10 SECTOR OF STUDY

a) **Usefulness**

The precoded variable on the level of studies does not provide sufficient information to analyse the relationship between training and occupation appropriately. On the other hand, the additional detail referring to the field of university studies or vocational training is very interesting.

b) **Collection method**

In the household questionnaire, as a precoded variable (to simplify the process)

c) **Detailed formulation**

The operation can use the recent revision of the International Standard Classification of Education (ISCED), which has recently been adapted to the Spanish panorama.

to generate the first National Classification of Education (NCED), containing a specific classification of *sectors of study:*

Sectors of study:

1 □ **Law**

2 □ **Teaching, Primary education, Pedagogy...**

3 □ **Social sciences** (Administration., Psychology, Economy, Journalism.).

4 □ **Arts and Humanities** (History, Languages, Sound and Image Studies.).

5 □ **Information technology**

6 □ **Engineering**

7 □ **Technical and Industrial Training** (Mechanics, Metal, Technical Drawing, Electricity.).

8 □ **Sciences** (Biology, Chemistry, Physics, Mathematics.).

9 □ **Architecture or construction**

10 □ **Agriculture, livestock and fishing; Veterinary medicine**

11 □ **Health, Social Services** (Medicine, Nursing, Pharmacy, Social Work.).

12 □ **Other Services** (Tourism, Accommodation; Hairdressing; Nautical Training, Military Training.).

B.11 STUDIES IN PROGRESS

a) **Usefulness**

Although they are specifically studied in education statistics, their inclusion in the Censuses allows the investigation of the relationship between studies in progress (and which kind of studies) and the rest of the census variables, providing more analytical wealth than said statistics. It is particularly useful to follow up the evolution of inequalities in education, by geographical, socioeconomic variables...

b) **Collection method**

Using a simple precoded variable, without additional literals, in the individual questionnaire (which shall only be completed by persons aged 16 years old or more who work or study). To increase the usefulness of the question, respondents can mark more than one box.

c) **Detailed formulation**

As occurs with the former two variables related to education, the base is the Spanish version of the ISCED, which has given way to the first version of the NCED:

What type of courses are you studying?

(you can mark up to three boxes)

1 □ Primary education for adults (literacy, basic education.).

2 □ Social Guarantee Programmes

3 □ OSE, Secondary education for adults

4 □ Post Secondary Education, Post-secondary non-higher education

5 □ Official Languages School

6 □ Elementary or intermediate artistic education

7 □ Intermediate vocational training or equivalent studies

8 □ Advanced Vocational Training, VTII or equivalent studies

9 □ University diploma degree, Architecture or Technical engineering, or equivalent

10 □ University degree, architecture, engineering or equivalent

11 □ Postgraduate course, MA, Spanish Doctor's Exam or similar

12 □ Ph. D

Other training courses

13 □ INEM course, Training Workshop or other courses for unemployed persons

14 □ Course offered by the company (only for employed persons)

15 □ Other courses not mentioned above (computer technology, preparation of official
exams, languages in academies, cultural or leisure courses.).

B.12 PLACE OF STUDY

B.13 NUMBER OF JOURNEYS A DAY TO THE PLACE OF STUDY

B.14 MEANS OF TRANSPORT TO THE PLACE OF STUDY

B.15 DURATION OF JOURNEY TO THE PLACE OF STUDY

These four questions, referring to the place of study, are analogous to questions B.21, B.22, B.23 and B.24, respectively, referring to the place of work. To keep the design of the individual questionnaire (including these questions) simple, persons who study and work at the same time, will refer to the place of work.

It is important to include the questions because, apart from their intrinsic use to measure average journeys when considering centres of education[1], it will also improve the estimate of the *linked population.*

B.16 RELATIONSHIP WITH ACTIVITY

a) **Usefulness**

This is the basic and initial question used to measure economic activity, as it makes a distinction between persons who are employed, unemployed, inactive...

b) **Collection method**

[1]Albeit only persons aged 16 years old or more; including journeys made by the school population would ineffectively increase the number of individual questionnaires or would, alternatively, require the question to be included in the household questionnaire matrix, which, as there is no space for it, would cause a complete and expensive restructuring of its format (more pages or a larger size.). Moreover, it should be possible to obtain this information from administrative records in greater detail

Using a precoded variable in the household questionnaire, using the multiple response procedure: each person has to check **all** (not a maximum of 3, as occurred in the 1991 census) applicable categories.

The heading *student* will be specifically relevant in this section, as it is the only information provided to detect whether children between 0 and 15 years old go to school. So as to improve the quality of this information, a mark will be printed beforehand on the sheet to identify children that are of compulsory schooling age, so that the Census agent can check that in these cases the box has been marked, confirming a negative response if it has not been checked.

In general, controlling the answers to this question *in situ* will be essential as it will determine which people have to complete the individual questionnaire.

c) **Clarifications regarding the definition**

International recommendations on Census issues establish the *Work time* (analysed further on) as another basic variable, making a distinction at least between *full time, long part time* and *short part time.* This characteristic could be considered by breaking down the traditional heading *employed into three sections;* however, in view of the observations voiced by experts in work statistics (according to which, people sometimes have very different perceptions regarding what it means to work *part time or full time*), it seems more appropriate to ask respondents about the number of hours worked (more details discussed in question B.20).

With relation to the previous Censuses, changes have been implemented in certain categories:

• This Census clarifies the three categories related to receiving a pension, which in the 1991 Census partially overlapped.

• In view of the growing social concern, there are two new categories which estimate the number of persons that work in social volunteering activities, on the one hand, and the number of *dependant* persons (in other words, whose who need help to carry out basic activities), on the other.

• The category 'housework' has been reformulated to make it compatible with any another response.

• In order to not have too many categories, and given its imminent disappearance, the category referring to Military service or alternative civilian service is moved to the last category, which has a residual nature.

d) **Detailed formulation**

Which of these situations were you in last week? *(please mark all corresponding categories)*

1 □ Receiving some type of education *(even in nurseries, academies, companies.).*

2 □ Employed (worked at least 1 hour) or temporally absent from work

3 □ Unemployed person, seeking first job

4 □ Unemployed person who has worked previously

5 □ Drawing a permanent disability or invalidity benefit

6 □ Drawing a widowhood or orphanhood benefit

7 □ Drawing a retirement or pre-retirement benefit

8 □ Carrying out social volunteer tasks

9 □ Needing help to perform basic activities (wash, get dress, move.).

10 □ Carrying out or sharing household tasks

11 □ Other situation (minors who do not go to school, independently wealthy, military or social service).

B.17 OCCUPATION

a) **Usefulness**

The information on occupation provided by the Census is key for a variety of social and economic policies, as it contributes geographic and conceptual details that cannot be achieved in sample surveys or, specifically, in the APS.

b) **Collection method**

Using a combined question: citizens will find their occupation in a list and classify themselves in accordance; subsequently, only those persons who cannot find their exact occupation or who have queries regarding the selected heading, will have to describe their occupation literally.

To make it easier for persons to find the heading corresponding to their occupation, in the test, the operation successfully included four different lists, so that each person, on the back of his or her individual questionnaire, had the most frequent occupations in terms of their level of studies (data drawn from the register information) and type of municipality in which he or she resides. The real Census will maintain this method, using the same table of occupations for all the members of the same household (as used in the second test, with good results: only 5% of the persons answered with a literal, without a precode).

c) Clarifications regarding the definitions

In terms of the reference group, retired persons did not have to answer this question: this led to a significant reduction of the number of individual questionnaires and, moreover, more attention was granted to this group, making the process as less cumbersome as possible; on the other hand, knowing the last occupation of each retired person is not as useful as the last occupation of occupied persons (especially when they have been retired for a long time).

Nevertheless, it is important to ensure that this decision is not interpreted in the opposite way, as if the living conditions of this group are considered totally irrelevant and of no importance to the operation.[1]

The query (which appeared after studying the suggestions in the draft, as no agreement was reached on the subject) was whether it should be answered by unemployed persons who had worked before. Finally, the easiest solution has been adopted, i.e. formulating questions related to economic activity only to employed persons.

e) **Detailed formulation**

The four different lists that will be used, as well as the method for the allocation of the same, are included in Annex **III.** In terms of the actual question itself:

Which was your occupation last week?

ATTENTION: This question does NOT refer to qualifications (degree, Ph. D.), or professional situation (civil servant, entrepreneur) nor labour category (officer, trainee), but to the type of work performed.

Find it in the list of occupations and note the corresponding heading (letter and number):

D D

letter number

If you cannot find your exact occupation or have queries regarding the category selected, please write it below: _____

B.18 ACTIVITY OF THE ESTABLISHMENT

a) **Usefulness**

The notes given for the question regarding occupation apply. Additionally, information on activity in small geographical areas is required to demonstrate the compliance with the requirements needed to access certain community assistance funds (from which Spain receives many thousands of millions of pesetas).

b) **Collection method**

[1] In the first considerations on these Censuses, back in April 1996, the possibility of a theme-based sample questionnaire was considered to measure the growing needs of social assistance derived from the aging of the population. This concern has finally been expressed in a more specific and useful investigation, the Survey on Disabilities, Impairments and Health Status, which the INE performed in 1999, in collaboration with the IMSERSO and the ONCE. Moreover, as a complement, a new category has been included in the previous question, regarding the relation with activity, aiming to estimate the number of *dependant* persons with a geographical detail that can only be provided by the Census.

Using a combined question, in other words, precoded list and additional literal (although the latter will only be used when necessary). There will also be several other lists, as in the question about occupation, although in this case the criterion that has been considered to be the most discriminant, especially in the industrial sector, is the province (more details in Annex **III).**

c) **Clarifications regarding the definition**

The question will be formulated to the same group that answered the occupation question. All considerations performed in this respect in the question on occupation are applicable in this section.

d) **Detailed formulation**

Which is the main activity performed by the establishment where you work?

(precoded lists also appear in Annex III)

B.19 PROFESSIONAL SITUATION

a) **Usefulness**

Complements the information on the economic activity provided by the occupation and activity of the establishment; specifically, it allows the determination of the *socio-economic category ,* variable used in multiple social researches.

b) **Collection method**

Variable that is precoded in the individual questionnaire, to be answered by the same group who answers the questions on occupation and activity

c)**Detailed formulation**

Which was you professional situation?

Entrepreneur, professional or self-employed worker

1 □ who employs personnel

2 □ who does not employ

personnel

Employee, employed by others

3 □ permanent or indefinite

4 □ temporary, for a specific project,...

Other situations

5 □ Family Assistance

6 □ Member of co-operatives

B.20 TIME USUALLY WORKED a)

Usefulness

This question makes a distinction between full time and part time work, an aspect that is unquestionably relevant and becoming more interesting for the analysis of the labour market

b) **Collection method**

In the individual questionnaire, specifically asking about the number of hours worked (numerical variable with two digits).

c) **Clarifications regarding the definitions**

Refers to the number of hours **usually** worked in one week (to avoid the distortion of possible holidays absences, overtime hours, during the reference week). Nevertheless, since the other questions refer to measuring the *actual activity* and not the *regular activity,* this question will have to be explained carefully to make sure it is understood, especially by very short employments.

d) **Detailed formulation**

How many hours do you usually work a week? **D**

B.21 WORKPLACE

a) Usefulness

Detailed information on the address and number of daily journeys to and from the place of work is very useful for town planning, controlling and improving traffic, environmental protection...

b) **Collection method**

In the individual questionnaire, only for employed persons (this is another reason for not requesting the occupation, activity and professional situation of unemployed persons: the group will be the same in all variables of activity, thus facilitating the design and flow of the individual questionnaire), using a precoded variable and, if necessary, an additional literal for municipality-province or country.

c) **Clarifications regarding the definitions**

From the perspective of the amount of information, it would be ideal to request the postal address of the place of work (this would allow a better analysis of intramunicipal journeys). However, this formulation presents serious inconveniences: it is very complicated to process this information and, most importantly, it is considered very private by certain sectors of the population (in the opinion questionnaire provided to households in the first pilot test, about one fourth of the employed persons found this question was uncomfortable and most said they would refuse to answer it[1]), therefore it seems more appropriate to request the municipality where the place of work is located and complete the information with the following three questions

[1] It is important to note that said 25% of the households, which is already a high percentage, is an average value, which means that, in certain strata of the population (for example, persons who are concerned about their safety or who do not work in a completely regulated manner), this question would be rejected frontally, and could even endanger the social acceptance of the operation. In Censuses where this is one of the primordial criteria, the risk that asking the exact address of the place of work entails is, therefore, unacceptable.

(number of journeys a day, means of transport and time spent travelling)[1].

d)**Detailed formulation**

The same question will be used to investigate the place of study:

Where is the place where you work or study located?

(if you work and study, please refer to the place where you worked last week)

1 □ At home

2 □ In several municipalities *(haulage contractors, travellers.).*

3 □ In this municipality

4 □ In another municipality:

DDDDDDDDDDD

Province: DDDDDDDDDDDD 5 □

In another country

Country: DDDDDDDDDDD

B.22 NUMBER OF JOURNEYS A DAY TO THE PLACE OF WORK

a) **Usefulness**

Provides additional information for the previous question and solves incoherencies created by the existence of second dwellings from which persons travel to the place of work or study

b) **Collection method**

In the individual questionnaire, using a precoded question, focusing on employed persons with a permanent place of work that is not their actual dwelling

c) **Detailed formulation**

(Only if you answered 3, 4 or 5 in the previous question)

How many times do you usually travel to and from your house and your place of work/study?

1 □ None (because I have a second residence from which I travel to work/study)

2 □ Once (i.e., one journey to and one journey from)

3 □ Twice or more a day

B.23 MEANS OF TRANSPORT TO THE PLACE OF WORK

[1] As in specific sample surveys, which clearly show that this information is only of interest in cities (in small municipalities it will only increase the work load unnecessarily and will hurt sensitivities)

a) Usefulness

It is a perfect complement for the question on the place of work, specifically useful for intramunicipal journeys; specifically, it allows the connection of the use of group transport and the rest of the census variables.

b) **Collection method**

In the individual questionnaire, using a precoded question, for on employed persons with a permanent place of work that is not their actual dwelling.

c) **Clarifications regarding the definitions**

If the respondent combines several means of transport, either select the one used to travel the greatest distance (losing information on primordial journeys) or allow multiple answers (losing information on the main means of transport). As attempting to capture both is too complicated for the Census, and using a combination of means of transport is more and more frequent, respondents can select two categories.

d) **Detailed formulation**

(Only if you answered 2 or 3 in the previous question)

How do you normally get from home to that place?

(if you use several means of transport, please mark the two that travel the longest distance)

1 □ Car or van, as the driver

2 □ Car or van, as a passenger

3 □ Bus, coach or minibus

4 □ Underground

5 □ Motorcycle

6 □ Walking

7 □ Train (even local or suburban)

8 □ Other trains (Generalitat, FEVE.).

9 □ Bicycle

10 □ Other means not mentioned previously

B.24 DURATION OF THE JOURNEY TO THE PLACE OF WORK

a) **Usefulness**

Provides complementary information on work-related journeys, which is particularly useful for intramunicipal journeys (where the question on the place of work, as it does not provide the address, is insufficient).

b) **Collection method**

In the individual questionnaire, focusing on the same group as the previous question and as a precoded variable.

c) **Detailed formulation**

How long does it normally take you to get from your home to this place?

1 □ Less than 10 minutes

2 □ Between 10 and 20 minutes

3 □ Between 20 and 30 minutes

4 □ Between 30 and 45 minutes

5 □ Between 45 minutes and 1 hour

6 □ Between 1 hour and an hour and a half

7 □ More than one and a half hours

B.25 KNOWLEDGE OF OWN LANGUAGES

a) **Usefulness**

This question or questions, already included in previous census, are needed for measuring the evolution of knowledge of own languages in certain Spanish regions and for planning and following up linguistic policies.

b) **Collection method**

In the household questionnaire in Communities with their own language.

c) **Detailed formulation**

The ideal would be to have reached a single formulation, which is valid in all regions with their own language. However, this heterogeneous starting situation (with three different ways of researching this topic, which even differ in the number of questions posed) and the need to prioritise the chronological series, has made this objective unfeasible, meaning that the same questions and categories as in 1991 will be used.

C Characteristics relating to households

This section is new with regards 1991, when the only variable relating to the household was the *tenancy regime.* On this occasion, as well as this question, which continues to be essential, other questions are included for the first time, such as the availability of vehicles or second homes, considering them of special use, and taking advantage of the fact that in the dwelling and building sections, a fairly substantial simplification is going to be proposed. In this way, the efficiency of census information is improved by considerably increasing its practical usefulness without correlatively increasing its cost (it may actually decrease as a whole).

C.1 DWELLING TENANCY REGIME:[1]

a)**Usefulness**

[1] This variable is included here as a characteristic of the households, not as a characteristic of the dwellings, since it is a case of determining the scheme under which the household living within is occupying said dwelling; thus it cannot be considered a variable intrinsic to the dwelling (unlike the number of rooms or the availability of certain facilities and services).

Essential for the planning and follow up of housing related policies. At the same time, it is an indicator that is used in a large amount of socio-demographic research, as it is related to social status.

b) **Collection method**

As a pre-coded variable in the questionnaire, which each household should answer just once. The questions relating to both the household and the dwelling are included (from now on called *Household Questionnaire).*

c) **Detailed formulation**

In terms of the categories considered in 1991, two of them *(Provided free for work reasons* and *Renting with furniture)* are withdrawn with the aim of making the design and answering of the question easier, given its lack of quantitative relevance (hardly exceeds 1 percent).

Dwelling tenancy regime

Owned

1 □ Bought, completely paid

2 □ Bought, with payments pending (mortgages).

3 □ Through inheritance or donation

4 □ Rented

5 □ Granted freely or at a low price by another household or the company

6 □ Another way

C.2 AVAILABILITY OF MOTOR VEHICLES

a) **Usefulness**

Allows an estimation of the density of vehicles in very small geographical areas, making it easier to adopt measures to ease road traffic and likewise, an estimation of garage spaces in the same area facilitates measures for parking resident vehicles. It also serves as an indicator of social status. It can also be used as a stratification variable in sample mobility surveys.

b) **Collection method**

In the household questionnaire.

c) **Clarifications regarding the definitions**

Only cars, vans and similar are considered (not however motorcycles) and whenever they are used mainly as a means of personal transport (for example, a taxi, van or lorry used only for professional purposes would not be included).

d) **Detailed formulation**

Does this household have a car or van that is used mainly as a means of personal transport?

1 □ Yes, one

2 □ Yes, two

3 □ Yes, three or more

4 P No

C.3 YEAR IN WHICH DWELLING OCCUPIED

a) **Usefulness**

Complements the information on migration movement, particularly from an intra-municipality perspective. The average age of the households in your current dwelling is a very interesting indicator of the migration and real estate dynamism in each area and contributes very useful information to the household formation process.

b) **Collection method**

In the household questionnaire

c) **Clarifications regarding definitions**

When all household members have not arrived at the dwelling at the same time, a compromise needs to be made; the best solution seems to be to refer to the member that arrived first. The alternative would have been to ask the question to each resident separately, but although this would have given better results, it would not have compensated the cost in terms of the flow complication and the formulation of migratory questions, which would have needed to be answered to a greater extent and with too much repetition. On the other hand, the year of occupation of each resident is one of the most interesting longitudinal variables to be covered by the new statistical project included in the National Statistics Plan 2001-2004, titled *Longitudinal Demographic Analysis.*

d) **Detailed formulation**

How long has the household lived in this dwelling? *(if they* *did not all come at the same time, refer to the first to arrive)*

Since

C.4 AVAILABILITY OF SECOND DWELLING

a) **Usefulness**

Alternative to the question on *place of second residence* (finally rejected), which allows, together with the questions on place of work and study, an estimation of the new population concept that has been introduced *(linked population).* As has already been previously explained, this concept will replace the *de facto population* concept used up until now and will allow a better approximation of the *genuine* population load that each municipality must bear (*resident or de jure populations* are not usually enough for this purpose). It is also useful for tourism or mobility studies.

b) **Collection method**

As a pre-coded variable and, if the answer is yes, as literal municipality and province variables. In order to allow for a more precise estimation of the new *linked population*

concept, there is also a question asking for the approximate number of days a year that the dwelling is used by a member of the household.

c) **Detailed formulation**

Does this household usually use a second dwelling *(either owned, rented or given freely)* **for holidays, weekends, as a second residence?**

1 NO

2 Q YES ..... **Where is the second dwelling?**

(if you have more than one, please refer to the one you use most)

1 □ In this same municipality

2 □ In another municipality

Municipality DDDDDDDDDDD-DDDDDDDDDDD

Province DDDDDDDDDDD

4 □ In another country

Approximately how many days a year does a member of the household use the dwelling? | || | days

D Characteristics relating to dwellings and premises

Discussed below are the characteristics to be researched for the *spaces,* in other words the dwellings, either family or group establishments, accommodation and premises.

In terms of what is concretely referred to as the characteristics of family dwellings, it is important to emphasise that except for the first question analysed, *type of dwelling,* **all the rest only refer to main dwellings,** in other words, those that constitute the regular residence of someone.

This is also a new aspect with regards the 1992 Housing Census, where the majority of the questions were asked about dwellings that are not the main dwelling. However, the lack, in many cases, of adequate informants (sometimes there was simply no informant) caused high non-response percentages, which require excessively large imputation processes.

In any case, dwellings that are not the main dwelling can be characterised both with variables relating to the building in which they are located, as well as with the variables of the main dwellings in their building; in the majority of cases, these data are more relevant and precise than those obtained directly under the conditions mentioned from the dwellings that are not main dwellings.

In terms of the choice of variables, the panorama is much less clear than with the characteristics relating to people or to households. In effect, a review of questions relating to dwellings in 1991 shows that many of them that were then very relevant, have become less interesting (for example, in 2001, the availability of running water or electricity will be almost universal).

It could be argued however, that knowledge of the amount and location (always respecting statistical secrecy) of marginal cases could be useful in order to make this type of cases even less frequent. The existence

1990, that research (exhaustively) the characteristics of new buildings *(Construction and Housing Statistics,* Ministry of Development) makes it even more inefficient to continue asking these questions indiscriminately. For this reason, they have sometimes been completely replaced and other questions have been moved to the building data section, where they can be researched much more efficiently (the loss of information will be minimum because the majority of marginal cases are found in single dwelling buildings or affect all dwellings in a building).

Moreover, the deletion of some of these questions has left room to research other dwelling characteristics that are of more use nowadays, bearing in mind that the ultimate purpose of statistical research, and the Demographic Census in particular, is to make possible progress in society and to improve living conditions, contributing the knowledge needed to direct adequate political action. And in order to achieve this, **it is essential that the questions included in each census are adapted to the specific information requirements of the time.**

Given the aforementioned terms, the proposed Census content on households and dwellings shows a less constant focus that that applied to people (the most striking example could be considered as question C.2. relating to the availability of vehicles, or D.8. relating to problems within the dwelling or the surrounding area).

Another important new concept with regards previous Censuses is the search for optimum coordination between the questions on dwellings and those on buildings, including the resulting and important benefits: reduction in workload, an easier housing questionnaire design, practical impossibility of incoherence between both sets of information.

D.1.TYPE OF SPACE

a) **Usefulness**

The difference between family dwellings, group establishments, accommodation and premises is essential for determining the characteristics that need to be researched in each case.

b) **Collection method**

As a pre-coded variable in the **itinerary notebooks.**

c) Detailed formulation

TYPE OF SPACE

1 □ Family dwelling

2 □ Group establishment

3 □ Accommodation (fixed or mobile)

3 □ Active premises

4 □ Inactive premises

D.2. TYPE OF

PREMISES a)

Usefulness

As well as completing the information on premises, the type of building will be automatically determined in a very detailed way and all public services will be located, including those located within residential buildings. The subsequent integration of this information into a Geographic Information System will allow special analysis of great practical use to be carried out (for example, where a new school, nursery, outpatient clinic, day centre is needed).

b) **Collection method**

As a pre-coded variable in the **itinerary notebooks.**

c) Detailed formulation

TYPE OF PREMISES

Premises used for specific services

1 fj Health services (outpatient clinic, health centre, hospital).

2 fj Education services (college, university, nursery, school).

3: Social welfare services (old age persons' club, social services centres, day centres).

4. Cultural or sports services (theatre, cinema, museum, exhibition rooms, sports centre). **Other premises**

5 □ Commercial premises

6 □ Offices (this also includes other services)

7 □ Industrial premises

8 □ Agricultural premises

D.3 GROUP TYPE

a) **Usefulness**

Allows the number of group establishments of each type to be known, as well as the number of people living in each of them.

b) **Collection method**

As a pre-coded variable in the **itinerary notebooks.**

c) Detailed formulation

GROUP TYPE

1 Hotels, motels, guesthouses, cheap hotels, hostels, chalets, independent hotel apartments...
2. Halls of residence, student residences;
3. Workers residences
4. Educational institutions (boarding schools for GBE, secondary schools, VT and military schools, seminaries.
5. General hospitals
6. Psychiatric hospitals.
7. Long-stay hospitals (except psychiatric hospitals): geriatric hospitals and those for the chronically ill.
8. Asylums or old people's homes.
9. Institutions for persons with disabilities (except psychiatric).

10.Hostels for those people marginalised from society.

11.Other social assistance institutions for children, young people and adults...

12.Religious institutions not previously included (monasteries, abbeys, convents, novitiates).

13.Military establishments (barracks, official and sub-official quarters, military camps).

14.Penitentiary institutions (prisons, reformatories, correction centres).

15.Other group type

D.4. TYPE OF DWELLING

a) **Usefulness**

The distinction between main, secondary and empty dwellings is essential, both from an analytical and operational point of view (as explained above, the other variables will refer only to main dwellings)

b) **Collection method**

As a pre-coded variable in the **itinerary notebooks:** the only way of collecting the information for all dwellings without needing a specific questionnaire

c) **Detailed formulation**

TYPE OF DWELLING

1 □ Main dwelling (regular residence of at least one person)

NOT A MAIN DWELLING

2 n Secondary dwelling (used only in holidays, weekends, for temporary work).

3 □ Empty dwelling (available for sale or rent, or simply abandoned)

4 □ Other type (for example, those dwellings rented out successively for short periods of time)

5 □ Not a main dwelling, without being able to determine whether it is 2, 3 or 4.

Category 4 will include dwellings used continuously and in a non-seasonal way (they should not therefore be considered as *secondary),* but which do not constitute the regular residence of anyone either. Category 5 aims to avoid obliging the agents to take decisions that are not well founded on the type of dwelling that is not a main dwelling when the only thing they know is that the dwelling is empty at that time and that there is nobody registered (in other words, they do not have enough information to determine whether the dwelling is secondary or empty).

D.5. NUMBER OF ROOMS

a) **Usefulness**

Put in relation to the number of residents, this is a commonly used socio-economic indicator, including in international comparisons (it's the most frequent Census question on dwellings).

b) **Collection method**

The *number of rooms* would be included as a numerical variable of two digits in the Household Questionnaire

c) **Detailed formulation**

How many rooms does the dwelling have in total? □ D

(as well as the bedrooms, this includes all rooms that are 4 square metres or bigger, including the kitchen)

(Does not include bathrooms or toilets, halls, corridors, open terraces).

D.6. DWELLING AREA

a) **Usefulness**

This is another indicator of the size of the dwelling without the drawback of the number of rooms, as it doesn't undervalue dwellings with *open* designs (for example, studios, apartments).

b) **Collection method**

In the Household Questionnaire as a three digit numerical variable. Nevertheless, this is one of the characteristics that features in the cadastres, which means that it would be a good idea to study to what extent it could be substituted or complemented with the cadastre data (for example, if it were decided to use this as data printed beforehand to be confirmed, it would be better to move the variable to the itinerary notebooks).

c) **Detailed formulation**

What is the approximate useful area of the dwelling?

(Does not include open terraces or gardens; nor basements, attics or storage rooms, which are not habitable)

D.7. DWELLING FACILITIES

a) Usefulness

Contributes information on each dwelling's equipment, which, among other things, allows the urban and residential assets of each geographical area to be valued, areas with a lack of dwellings to be detected, the social status of each household to be more precisely estimated, etc. However, this question should be designed in coordination with the equivalent question on a building level, given that many facilities can be researched more efficiently on this level.

b) **Collection method**

In the Household Questionnaire, with an independent pre-coded variable for each facility researched.

c) **Clarifications regarding the definitions**

As stated in the introduction to this section, this question is going to be made substantially simpler in relation to the 1991 Census. Outlined below is a detailed study of all the facilities that have been considered:

Pipe fed gas

It is better to research this at a building level (because if a building has gas, it is likely that all dwellings have it and because in any case, knowledge of this characteristic at this level provides enough information). As well as its lower cost and to make the household questionnaire design easier, an additional advantage of this option is that it adapts much better to municipalities where it is known in advance whether there is gas or not.

Telephone

The progressive introduction of new technologies (mobile phone, Internet) means that the landline is now not an essential item for being well connected. For this reason, it is considered more useful and efficient to restrict the questions to a building level and whether there is a telephone line or not.

Computer and Internet access

These are two very interesting characteristics, but their explosive development (particularly in terms of the Internet) advises against their inclusion in the Census (when the results are able to be disseminated, these characteristics will be completely out of date). It is better to research them in more dynamic surveys, so that they can be researched continuously.

Heating and Air Conditioning

Keep them

Fuel used for heating

Keep it

Toilets and bath or shower facilities

Given the almost universal existence of these facilities and the poor social acceptance of the question in the 1991 Census, it is replaced with the *Does not have toilet facilities (toilet and bath or shower) inside the dwelling category* of new question D.8, analysed below. The question on the *removal of waste water from buildings* will also provide related information.

Running water

This moves to the building level, where the almost universal nature of this characteristic can be taken more efficiently into account (to begin with, it will be the agents and not people who fill in this question, normally without having to ask it)

Electricity

Is not considered to be useful: its introduction, both to the *stock* of 1991 dwellings, as well as to new buildings, is almost complete (above 99.5 percent); moreover, the detecting of substandard areas can be based on other more important variables

Hot water

This variable has caused the most doubts, given that its level of introduction is very high (between 90 and 95 percent), although it is still not as universal as electricity or running water.

The sample level is perfectly covered by surveys such as the HBCS or the European Household Panel; it is also researched exhaustively.

For new buildings, the question on the buildings' *central hot water*: will be taken advantage of: in single dwelling buildings, the equivalent will be to ask whether the dwelling has hot water and this seems to be enough (in buildings with more than one dwelling, availability, according to the 1994 Household Panel reaches almost 99 percent)

d) **Detailed formulation**

Does this dwelling have the following facilities?

Air-conditioning	1YES
(Mobile units are allowed not simple fans)	6 □ NO, but
Heating	1 Q YES, central heating (in buildings with just one dwelling, these are always considered to be *individual)*
	2 □ YES, individual heating
	3 □ There is no heating installed, but there is some kind of mobile or fixed apparatus that allows the temperature in some rooms to be raised (for example, electric radiators).
	4 □ There is no heating of any kind

If you answered 1, 2 or 3 to the question on heating, indicate the main fuel used to heat the dwelling:

1 □ Gas (butane, propane, natural gas).

2 □ Electricity

3 □ Oil or liquid derivations (gas oil, gas diesel oil, petrol).

4 □ Wood

5 □ Coal or derivative products

6 □ Others

D.8. PROBLEMS WITH THE DWELLING AND ITS SURROUNDINGS

a) **Clarifications regarding the definitions**

As this is a completely new question for the Censuses, it is a good idea to start by clarifying the definition. It deals with an adequate adaptation of the following question, contained in the European Household Panel (the brackets contain the percentage of *yes's* referring to 1994):

Does your dwelling have any of the following problems or difficulties?

1 □ Lack of space (23)

2 □ Outside noise (33)

3 □ Insufficient natural light in some or all rooms (21)

4 □ Lack of adequate heating facilities (5)

5 □ Leaks (13) _____

6 □ Damp (25)

7 □ Poor quality wooden floors or windows (9)

8 □ Pollution, dirt or other environmental problems caused by industry or traffic (20)

9 □ Delinquency or vandalism in the area (26)

(Only 25 percent of households declared that they did not have any of the above)

b) **Usefulness**

Including this kind of question in the Census allows information to be obtained that is very interesting for very small geographical areas, which multiplies the possibility of its practical use in the planning of concrete actions aimed at reducing these problems. This would obviously improve living conditions in the most affected areas. There were certain doubts about including this question in some Censuses because of its subjective nature, but in the first pilot test it has been, without a doubt, the question best accepted by households. For this reason, it has been decided to put this question before others within the ensemble of questions relating to the dwelling in order to improve the overall social acceptance of the questionnaire.

c) **Collection method**

In the household questionnaire, treating each *problem* as a dichotomised sub-variable.

In terms of the choice of *concrete* problems to ask, those that allow the most objective versions have been omitted (for example, lack of space, which could be deduced from the comparison between the number of residents and the area) or those that are difficult to solve via action by Administrations (for example, lack of natural light). In particular, one of the most requested in suggestions arising from the draft was public facilities (schools, hospitals), which will be investigated via the *type of building* variable from the itinerary notebooks (because of the greater objectivity and because it will allow each one to be collected separately)

d) **Detailed formulation**

Does your dwelling have any of the following problems?

	YES	NO
Outside noise	DI	D6
Pollution or bad smells caused by industry, traffic...	r1	D6
Dirty streets	DI	D6
Lack of green areas (parks, gardens).	)1	D6
Bad communications	DI	D6
Delinquency or vandalism in the area	a1	D6
Lack of toilet facilities (toilet and bath or shower) inside the dwelling	D1	D6

E Characteristics relating to the buildings

E Characteristics relating to the buildings

Substantial new features are also proposed in this section.

The first, and perhaps the most important, is the **deletion of the specific buildings questionnaire:** once all the information for each building has been examined, it seems more practical to integrate it directly into the Itinerary Notebooks printed beforehand.

As well as being a more flexible process and one that substantially reduces printing costs, this option allows for greater use of the preview information available and as a result, better adaptation of the information in terms of quantity and quality in each geographical area.

Another significant new feature is the **simultaneous collection of population, housing and buildings data.** As well as making the previous link between the housing and buildings data unnecessary (as was done quite successfully, but also with a lot of effort in previous Censuses, where buildings data was collected first, six months before the rest of the data) and removing the difficulties of working with two different Census times (registered buildings, buildings not registered, buildings present in both options, but which can't be distinguished between), significant economies of scale are also achieved. This is done both in the processing as well as in the field work by taking advantage of the inevitable contact with respondents to gather their personal data and the housing data in order to also achieve the buildings data, which cannot be directly filled in by the agents.

The third and final new feature is the **simplification of the information requested.** On the one hand this is the result of better coordination with the housing data and on the other hand, a result of adapting to current information needs, which means that some of the 1990 questions can be withdrawn; this is a consequence both of the almost universality of certain facilities, as well as the existence of the aforementioned *1980 Construction and Housing Statistics* in 1990, which provide complete information on all new constructions and complements the *snapshot* of the latest Censuses.

E.1 YEAR OF CONSTRUCTION

a) **Usefulness**

The age of the building is an essential variable when evaluating the property's assets and a very useful socio-economic indicator (especially for the sampling frameworks, given its huge temporal stability).

b) **Collection method**

Through a mixed variable in the Itinerary Notebooks (the exact year for buildings aged more than 10 years old is difficult to define and not particularly useful; for recent buildings however, it is easy and relevant).

c) **Clarifications regarding the definitions**

The year refers to the *last substantial refurbishment* carried out on the building. Refurbishment is considered to be substantial when the changes made are such that a practically new building has been created (part changes are therefore not included, nor are renovations to the front of the building)

d) **Detailed formulation**

Year of construction

1.Before 1900	6. From 1961 to 1970
2.From 1900 to 1920	7. From 1971 to 1980
3.From 1921 to 1940	8. From 1981 to 1990
4.From 1941 to 1950	9. From 1991 to 2001^ YEAR
5.From 1951 to 1960	

E.2 NUMBER OF FLOORS, DWELLINGS AND PREMISES

a) **Usefulness**

Absolutely basic buildings characteristics.

b) **Collection method**

In the case of number of dwellings and premises, the best way of achieving this is by exploiting the content of the itinerary notebooks, where each *space* is identified for each building, distinguishing between dwellings and premises. In terms of the premises, the occupation status is also identified.

In terms of the number of floors (above or below ground), a more specific question in the itinerary notebooks seems to be more practical.

E.3 TYPE OF BUILDING

a) **Usefulness**

This is a basic buildings characteristic, both from an analytical point of view as well as an operational one (buildings used exclusively as family or group dwellings are studied in much greater detail than the rest). In combination with question D.1 on the type of premises, this will allow the identification of buildings used for certain public services (hospitals, schools, cultural facilities). The subsequent integration of this information into a Geographical Information System will allow highly useful spatial analysis to be carried out.

b) **Collection method**

In the Itinerary Notebooks as a pre-coded variable.

c) **Clarifications regarding the definitions**

The problem with this variable centres on the definition of the main *term.* By applying the recent *Construction Type Classification* (final version dated 16/4/97), attention would have to be paid to the total useful area aimed at residential use and non-residential use; this would imply an understanding of the useful area of each of a buildings' *spaces.* Therefore, the same practical criteria as in the 1990 Buildings Census will be applied, where this variable was achieved by the agent carrying out direct observation.

d) **Detailed formulation**

Understanding the type of space (family dwelling, group establishment, active premises, inactive premises) and, in turn, the type of premises, allows us to differentiate between two single types of building:

Type of building
1. Building (or complex) used exclusively or mainly as family dwellings or group dwellings
2. Building (or complex) used exclusively or mainly for purposes that are different from a dwelling

The distinction between the buildings used as family dwellings and those used as collective dwellings will be carried out automatically according to the *type of space* contained in the building. And the different types of non-residential building can also be differentiated using the *type of space and premises* (with the advantage that by studying all spaces and all premises, the public services located in the buildings used mainly as dwellings will be found, which might otherwise have been missed).

The remaining building variables will only be investigated in keeping with the1990 Buildings Census and given the demographic nature of these Censuses, **in keeping with buildings used exclusively or mainly as dwellings.**

E.4 TYPE OF OWNER:

a) Usefulness

This allows us to understand, most interestingly, the number of communities of owners in each area and the characteristics of their buildings.

b) **Collection method**

In the Itinerary Notebooks as a pre-coded variable.

c) **Detailed formulation**

Type of owner
1. Individual
2. Community of owners
3. Private, non-profit Society or Institution
4. Public Body

E.5 STATE OF THE BUILDING

a) Usefulness

Allows us to evaluate more precisely the property assets in each area and to detect areas that are in a bad state of urban development preservation.

b) **Collection method**

In the Itinerary Notebooks as a pre-coded variable identical to that used in 1990

c) **Detailed formulation**

State of the building

1. In ruins
2. Poor
3. With some faults
4. Good

To guarantee intercensus comparability (which is particularly important in a subjective question such as this one), the detailed definition in each category will be the same as in 1990.

E.6 BUILDING FACILITIES AND SERVICES

a) **Usefulness**

This complements the question on dwelling facilities and contributes therefore to an understanding of the equipment and to detecting areas where there are significant gaps in terms of dwellings. In fact, many of the facilities that were asked about in 1991 at a dwelling level, will be investigated now, as it is more efficient to do this on a building level.

b) **Collection method**

Using an independent pre-coded sub-variable for each facility investigated

c) **Clarifications regarding the definitions**

The same as for the dwelling facilities: below is a detailed analysis of all the building facilities that were considered:

Running water

In 1990, almost 10 percent of buildings had running water from a private supply rather than from a public one. Given that it is interesting to understand how this situation has developed, it seems useful to retain this question.

Disposal of waste water

Something similar occurs: in 1990 an insignificant percentage of buildings (around 15 percent and almost all single dwelling buildings) did not dispose of waste into sewer system networks, but rather into septic tanks, wells and rivers. As the development of this data is interesting, the question will remain.

Electrical energy

In this case, it is virtually universal and therefore it seems preferable to withdraw the question: the 1990-91 *snapshot* and the subsequent data on new buildings are enough to give us an approximate idea of the volume and location of marginal cases (which are often not due to substandard housing problems, but rather that the electricity network does simply not run close to the building).

Pipe fed gas

This moves from the dwelling level, as it is more efficient and of similar usefulness

Telephone line

The implementation of new technologies (mobile telephone, Internet) brings the importance of each dwelling having a landline into perspective; for this reason, it seems more efficient to restrict ourselves to investigating whether there is a telephone line in each building or not

Lift

It is actually more interesting to investigate the *accessibility of the building, rather than whether there is a lift or not.* In particular, a building can be considered to be *accessible* when a person in a wheelchair is able to access the building from the street and enter one of the dwellings without the assistance of another person; moreover, this is investigated in relationship with whether there is a lift or not

Porter's office

There seems to enough interest in this question to retain it. In particular, it enables us to understand how many buildings have a person in charge of security, among other things.

Solar energy

Although its usefulness is recognised on a theoretical level (for being a clean and renewable energy source), both its current degree of penetration and the trends monitored are too insignificant to make its inclusion profitable: the 1990 data and the annual exhaustive flows from the *Construction and Housing Statistics* act perfectly well as a starting point, whilst we wait for technological and administrative improvements (in particular those that develop the recent legislative reforms on an operational level) to give a significant boost to this form of energy (much more common in other European countries with less hours of sun than in Spain).

Central hot water

This continues to be included; in single dwelling buildings, where the availability of hot water can be investigated.

Garage and number of spaces

In the dilemma over whether to include this question here, as in 1990, or to move it to the dwelling questionnaire, it seems better to leave it here: faced with doubts over which formulation is more useful, the best option is to choose the cheapest solution and the one that allows for greater intercensus comparison

Central air-conditioning

Not included: due to its marginal situation, because for the new buildings it is covered exclusively and because it will be included at a dwelling level.

Central heating (and type of fuel)

These are withdrawn, because in the dwellings questionnaire, this is asked of all dwellings with heating, even if it is a collective dwelling.

Garden, swimming pool, sports facilities, satellite dish and other facilities

Those that are most necessary for small geographic areas should be available as municipal data and the rest are well covered in sample surveys.

d) **Detailed formulation**

The keys for the itinerary notebooks could be:

Facilities and services	
Running water	1. From a public supply 2. From a private supply 3. None available
Central hot water	1. Yes, available 6. None available
Disposal of waste water	1. General sewer system network 2. Other system (septic tank, well). 3. None available
Telephone line	1. Available 6. Not available
Pipe fed gas	1. Yes, available 6. None available
Accessibility	1. Yes, with lift 2. Yes, without lift 3. No, with lift 4. No, without lift
Porter's office	1. Only entry phone 2. Only person in charge 3. Mixed system 4. None available
Garage	1.YES Number of spaces □□□ NO

F Summary of Census contents

UNIT / Section	Variable	Type	Doc[1]	Observations
PERSONS				
Demography				
	Sex	Pre-coded (2 categories)	HP	Printed beforehand
	Date of birth	Numeric (8 digits)	HP	Printed beforehand
	Place of birth	Mixed (code + literal)	HP	Printed beforehand
	Nationality	Mixed	HP	Printed beforehand
	Marital status	Pre-coded (5 categories)	CH	De jure version
	Own language	As in '91	CH	Only in bilingual regions
Household structure				
	Relationship with person 1	Pre-coded (6 categories)	CH	
Migrations				
	Place of residence ten years ago	Mixed (code + literal)	CH	
	Place of residence 1 year ago	Numerical	GP	Taken directly from register management
	Year of arrival and place of origin	Mixed (3 dates and literal)	CH	Moreover, in the HP for registers: current registration municipality.
Education				
	Level of studies reached	Pre-coded (10 categories)	CH	The minimum age for replying is increased from 10 to 16
	Study sector	Pre-coded (12 categories)	CH	Limited to VT and third grade studies
	Studies in progress	Pre-coded (15 categories)	CI	
Mobility				
	Place of	Mixed (code +	CI	

[1] Document in which each variable is included: HP: register sheet CV: dwelling questionnaire CH: household questionnaire CI : individual questionnaire QR: itinerary notebooks GP: by-product of the register management

UNIT Section	Variable	Type	Doc[1]	Observations
	work/study	literal)		
	Number of daily journeys	Pre-coded (3 categories)	**CI**	
	Means of transport to place of work/study	Pre-coded (8 categories)	**CI**	
	Length of journey to place of work/study	Pre-coded (7 categories)	**CI**	
Economic activity				
	Relation with the economic activity	Pre-coded (11 categories)	**CI**	
	Occupation	Mixed (code + literal)	**CIEI**	Literal, only when there are doubts or unusual occupations
	Establishment activity	Mixed (code + literal)	**CIEI**	Literal, only when there are doubts or unusual activities
	Professional Situation	Pre-coded (6 categories)	**CI**	
	Usual time worked	Numeric	**CI**	
HOUSEHOLDS				
	Dwelling tenancy regime	Pre-coded (6 categories)	**CV**	
	Availability of motor vehicles	Pre-coded (4 categories)	**CV**	
	Availability of second dwelling	Mixed (code + literal + numeric)	**CV**	Includes the number of days it is used a year
	Year in which dwelling occupied	Numerical		
DWELLINGS & PREMISES				
	Type of space	Pre-coded (5 categories)	**QR**	
	Type of premises	Pre-coded (8 categories)	**QR**	
	Type of collective dwelling	Pre-coded (14 categories)	**QR**	
	Type of dwelling	Pre-coded (6 categories)	**QR**	
	N^{Q} of rooms	Numeric (2 digits)	**CV**	

UNIT Section	Variable	Type	Doc[1]	Observations
	Dwelling area	Numeric (3 digits)	**CV**	
	Problems with the dwelling and its surroundings	Multiple dichotomy (one per category)	**CV**	
Dwelling facilities				
	Air conditioning	Dichotomy	**CV**	
	Heating	Pre-coded (4 categories)	**CV**	
	Fuel used for heating	Pre-coded (6 categories)	**CV**	
BUILDINGS				
	Type of building	Pre-coded (2 categories)	QR	A lot of detail when combined with type of space and premises
	Number of floors, dwellings, premises...	Numeric	QR	Except for the floors they are taken directly from the use of QR
	Year of construction	Pre-coded +numeric	QR	
	Type of owner	Pre-coded (4 categories)	QR	
	State of the building	Pre-coded (4 categories)	QR	
Facilities and services				
	Running water	Pre-coded (3 categories)	QR	
	Hot water	Dichotomy	QR	
	Disposal of waste water	Pre-coded (3 categories)	QR	
	Telephone line	Dichotomy		Moved from the dwelling level
	Porter's office	Pre-coded (4 categories)	QR	
	Garage (and number of spaces)	Mixed (YES/NO + 3 digits)	QR	
	Pipe fed gas	Dichotomy	QR	
	Accessibility	Pre-coded (4 categories)	QR	Includes the existence of a lift

Differences between the content of these Censuses and the 1990-91 Censuses

UNIT Section	Variable	Comparison between both Censuses
PERSONS		
Demography		
	Sex	Will not be asked in Census questionnaires (register data will be used)
	Date of birth Place of	Idem
	birth Nationality Marital	Idem
	status	Idem
	Knowledge of own languages	No change
	Residence situation	No change
	Place of residence of non-residents	Withdrawn
		Withdrawn, as well as in general, all those referring to non-residents (sex, age).
Household structure		
	Relationship with the reference person	Fewer categories, due to availability of surnames; *reference person* = n^{s} 1 from the register sheet, priority selection
	Existence of spouse or partner	Removed, because register data available to assist in generating nuclei
	Living together with father or mother	Idem
	Living together with relatives	Withdrawn
Migrations		
	Place of residence ten years ago	No change
	Place of residence one year ago	Will be taken directly from the register management instead of including it in the questionnaires
	Year of arrival and place of origin	Replaces the *last migration in the last 10 years* and *the year of arrival of foreigners*
	Place of residence five years ago	Withdrawn
	Last migration in the last ten years	Withdrawn
Education		
	Level of studies reached	This question will be asked to people aged 16 years and above (instead of from 10 years old, as in

UNIT Section	Variable	Comparison between both Censuses
	Studies sector	91); the literal is withdrawn
	Studies in progress	Replaces the level of studies literal This question will be asked to people aged 16 years and above (in 1991, it was asked to everyone); the literal is withdrawn
Mobility		
	Place of work or study	New (in 1991, only certain communities were included)
	Means of transport to place of work or study	Idem
	Number of daily journeys	New
	Length of journey to place of work or study	New
Economic activity		
	Relation with the economic activity	Can be used to monitor schooling under 16 years of age; new headings on volunteers and dependent persons
	Occupation	More categories; the literal will not be necessary except in special cases
	Establishment activity	Idem
	Professional Situation	No change
	Usual time worked	New
Other variables		
	Number of live births	Withdrawn; its inclusion in the '98 Fertility Survey and the '99 Survey on Disabilities, together with the 1991 information and the VS flows is enough
	Year of wedding	Idem
HOUSEHOLDS		
	Dwelling tenancy regime	Two marginal categories are withdrawn
	Year in which dwelling occupied	New
	Motor vehicles	New
	Second dwelling	New
DWELLINGS & PREMISES		
	Type of space	Allows the group establishment questionnaires to be eliminated; identifies the

UNIT Section	Variable	Comparison between both Censuses
		premises
	Type of premises	New, allows the type of building to be simplified, providing more information
	Type of group	One marginal category is withdrawn
	Type of dwelling	It will go in the QR instead of the questionnaire; accommodations go in one single heading
	Number of dwellings in building	This will be taken from the QR instead of formulating it in the questionnaire
	Year of construction	Withdrawn (left at a building level) No
	Area	changes No changes Withdrawn
	Number of rooms	
	Number of professional rooms	New
	Problems with the dwelling and its surroundings	
Dwelling facilities		
	Running water	Moved to building level
	Bath or shower	Replaced with a new question category *dwelling problems*
	Number of toilets	Idem
	Number of bathrooms	Withdrawn
	Electricity Telephone	Withdrawn
	Cooker	Withdrawn
	Heating and air conditioning	Moved to building level
		Withdrawn
	Fuel used for heating	No change
	Hot water Pipe	No change
	fed gas	
		Moved to building level
		Moved to building level
BUILDINGS		Questionnaire withdrawn: information will be included in the itinerary notebooks
	Type of building	Thanks to the type of space and premises, a greater level of breakdown is achieved with 2 categories
	Number of floors	No change
	Number of dwellings	Taken directly from the QR
	Number of premises	Idem.
	Year of construction	
	Type of owner	Simplified

UNIT Section	Variable	Comparison between both Censuses
	State of the building	No change
	Solar energy	Withdrawn as too marginal
	Lift	Replaced with *accessibility of building,* which includes it
	Pipe fed gas	Moved from dwelling level
	Central air conditioning Central hot water	Withdrawn as too marginal
	Central heating and fuel	Replaces similar question for dwellings
	Running water	Asked in dwellings
	Disposal of waste water	
	Porter's office	
Facilities and services	Electricity	Withdrawn as too universal

Chart-summary of differences between both Censuses

	TOTAL	PERSONS	HOUSEHOLDS/ DWELLINGS	BUILDINGS
Questions retained without essential changes	18	4	8	6
Questions retained, but which are simplified[1]	14	10	0	4
Questions withdrawn Questions added	29	11	13	5
	15	8	6	1

The new Census content means a

substantial reduction in workload (more than a third) with regards the 1990-91 Censuses Moreover, as the new features have been chosen for their particular practical usefulness, it is clear that this census content will substantially increase the efficiency of Census information; this therefore means that the specific objectives of these Censuses are fully met and listed in chapter four of this project.

[1] In formulation or if they need to be answered

9. Preservation of Census information confidentiality

One of the main new features of the 1991 Censuses was the special attention paid to protecting the confidentiality of census data.

In terms of the dissemination of Census data, concern in this area, which was exacerbated by the data collection operation that was in full swing and which was unfairly accused of *privacy invasion*, was able to be conveniently channelled via the then recently created *Protection of Statistical Data Board* (within the High Council on Statistics). Following long deliberations, recommendations on Census dissemination were drawn up with which the INE strictly complied. In virtue of these recommendations, the INE adopted a combination of protective confidentiality measures, which included both strictly technical regulations, as well as those of a legal or advertising nature[1].

For the 2001 Census, maintaining confidentiality when disseminating Census data is already well on course: making a few minor adjustments to the measures taken in 1991 to adapt them to the context in which the next Censuses are developed will be enough.

The central issue will become the preservation of confidentiality in previous Census stages, especially during the information collection (where, for example, envelopes will be used) and computerisation processes. The combination of register and Census data will also require delicate processing in order to respect their different characters and, above all, to prevent Census data from being added to the registers (which would clearly be illegal), simultaneously allowing the opposite to happen (which as well as being legal, is also essential). The key to this process is **to not create any nominal file with data that are not strictly register data, not even temporarily.** Files with strictly Census information only will contain IT keys without meaning, which for even greater security, can be subjected to an encrypting process.

Furthermore, the technical-legal panorama in which future Censuses will be developed in terms of statistical secrecy will present a significant change with regards 1991: the existence of the *Data Protection Agency,* a body expressly responsible for ensuring that statistical secrecy is complied with and which already has specific experience in this field as a result of supervising the Demographic Statistics that certain Communities attached to the 1996 Renovation, where a combination of register and Census data was used in a similar way to this proposal.

[1] They can be looked at in the book on Methodology of Population and Housing Censuses 1991.

10. Computer processing

Computerisation of Census data

One of the main new technical features in forthcoming Censuses will occur in this section: the **use of high performance scanners [1]to capture the questionnaire images and, subsequently, to apply OCR techniques;** not only using marks (as in the 1990 Buildings Census), but also handwritten numbers and letters.

In particular, a mixed type method will be used: for the literal manuscripts (in printed text), where the effectiveness of recognition is less, a subsequent comparison will be carried out between the *values recognised* and the real image; for greater efficiency, this comparison will be selective, only checking the literals whose recognised values are not found in specific auxiliary dictionaries (geographic, occupations, activities) or whose recognition reliability index is low. Only where there is a discrepancy between the recognised and real values will it be necessary to enter these values using a keyboard. This will result in a speeded up process in comparison with the traditional method.

The use of scanners will also mean a significant saving to the costs of storing Census documentation by allowing the destruction of papers almost immediately: the image will be much more useful and easier to look after and this process will cover one of the most complex aspects of the protection of Census data.

Computer processing procedures

Computer processing procedures (filtering, coding and tabulation processes) that should be applied to Census data are strongly conditioned by the enormous amount of information to be processed. Thus, procedures, above all those with a certain manual component, which operate perfectly in a sample survey, can be completely inadequate for these Censuses.

On the other hand, users repeatedly request a substantial reduction in the time they have to wait for the different Census results to be published[2]. Both factors coincide in the fact that, apart from guaranteeing an acceptable level of quality, **Census procedures should, above all else, be quick.**

Computer processing in future Censuses will also be conditioned by the need to increase coordination between Autonomous Statistics Institutes and the INE with regards this work, with the aim of achieving a more rational use of resources[3], thus achieving savings on costs and deadlines.

In this way, the new collaboration model consists of a division of functions between the INE and the Autonomous institutes, in such a way that each computer stage is carried out only once. Those Autonomous Communities that are interested in taking part in this aspect of the Census will take on the supervision of work concerning the computerisation of Census documents from their respective territories, in agreement with general regulations that have been previously agreed and in which initial filtering and coding work will be integrated.

[1] The best current models easily exceed the barrier of 100 DIN-A4 per minute.

[2] This is an aim that is mentioned again and again when talking about how to focus each relevant aspect of the Census, which clearly demonstrates that it should be one of the key issues in the next Census operation.

[3] This avoids processes carried out in parallel and in particular, the uncoordinated correction of the same mistakes via procedures that in general are very similar, but which logically do not produce the same results. This model, applied in 1991, was a good starting point for collaboration in this area of work, but should be substantially improved for 2001.

The criterion for deciding which processes need to be concentrated on in this area should be taken from the scanned images, in order to provide a better solution. The aim of these processes will therefore be to improve the results of the data capturing procedure (in the sense that it reflects as reliably as possible the answers contained in the physical questionnaires) and should only change their content in exceptional circumstances.

These first processes will be extremely important, because when carried out adequately, they will leave the information partly filtered and coded and of a level of quality that means that subsequent processes will have a minimum manual element.

When this stage is finished, the INE, who is in charge of the data capturing stage, will send a results file to each participating Autonomous institute, including the internal stage of consolidating all register data in all files. As a result of this file, it will be possible to disseminate results previews, always indicating the provisional nature of the figures. Some institutes will subsequently take on intermediate filtering and coding work (the main task being to code the literals that have not been coded in the scanning centre) and, in any case, the INE will ultimately take charge of carrying out the final, aforementioned processes. The minimal manual element to this final filtering work will considerably help in achieving the reduction in deadlines that we are aiming for.

The main aim is to ensure that the most important and well-known product of Censuses, the population figures, are published during the middle of 2002 and that the other Census information is disseminated throughout 2002 and 2003. In this way, by the end if this year, and once the basic Census dissemination programme has been completed, all efforts can be concentrated on making the most of the enormous potential contained in the Census data.

11. Dissemination of the Census information

1. Basic objectives

In order of importance:

• **To substantially shorten the dissemination deadlines** (start earlier and finish a lot earlier than in 1991)

• To develop a **very flexible dissemination strategy** that enables us to respond adequately to the very varied needs of the different types of user.

• **To fully understand the Census information** through, on the one hand, an adequate combination of measures aimed at maximising its demand and to facilitate its free use by specific groups on the other hand.

2. Stages

Census dissemination should be carried out in three, clearly differentiated stages, both in terms of the temporal perspective and its content:

? **During the middle of 2002,** the **population figures** will be disseminated, which are taken from the Census work and are detailed up to a municipal level. From then on, structures by sex and age will also be disseminated (as they deal with data that features in the Register).

? **During the second half of 2002 and the first half of 2003, the other register variables** (place of birth, nationality and residence one year before) will be disseminated, which require a slightly more complicated process.

? **By the middle of 2003, the Census variables will be disseminated,** in such a way that the main body of standard dissemination finishes at the end of this year.

3. Provisional results

The possibility of disseminating provisional results will be looked into, in order to placate the initial thirst for information. This results preview would be based on unfiltered data, would basically consist of marginal distributions and would mainly, if not solely, be carried out via the Internet.

4. Products

1. RESULTS MONOGRAPHS

Content: **population** counts; **provisional results** (existing); **basic report:** select ensemble of variable crossovers with some added value in the shape of graphs, comparative tables and comments (descriptive analysis).

Media/medium: basically printed publication; although there will also be electronic versions and these will be accessible on the Internet.

Geographical detail: counts up to municipal level; provisional results up to provincial level; the *basic report*, in theory will only be on a national level (although certain crossovers, in fact an entire chapter, will use the community/province as the classification variable).

Approximate date of availability: the counts, during the middle of 2002; the provisional results, in the second half of 2002; the basic report, in the second half of 2003.

2. PRE-DEVELOPED TABULATIONS

Content: variable crossovers with much less selective criterion than with the monographs; without added value.

Media/medium: Internet, disc or CD-ROM (depending on the volume), paper (possibility of having provincial and/or autonomous notebooks prepared).

Geographical detail: national; autonomous; provincial; municipal; Census section; block and street (for some sections only); entities and nuclei.

Approximate date of availability: by third quarter of 2003

3. REFERENCE MONOGRAPHS

Content: **Census project** with a priority *description of the* essential aspects of the Census operation **Census methodology,** with the subsequent, more detailed description of these same aspects and others that are related.

Media/medium: printed publication; Internet

Approximate date of availability: the project, beginning of 2001; the methodology, in the second half of 2003.

4. MICRODATA FILES

Content: anonymous samples of persons, households and dwellings

Media/medium: different types of computer medium (disk, CD-ROM).

Geographical detail: up to provincial level

Approximate date of availability: second half of 2003

5. GEOGRAPHICAL PRODUCTS

Content: Street maps; Digitalised outlines Digitalised content of some sections; Maps

Media/medium: different types of high capacity computer medium (CD-ROM, DVD-ROM); for specific requests, maps on paper

Geographical detail: Street maps, one per province; Digitalised outlines at a provincial, municipal and section level.

Approximate date of availability: Street maps, during the second half of 2002; the rest, as of 2003

6. COMPILATIONS OF CENSUS DATA WITH CARTOGRAPHIC SUPPORT

There are two different types:

a) **Pre-established ensemble of general interest tables with high conceptual detail and medium level geographic detail** (for example, up to provincial

level), integrated into an attractive graphic interface that permits simple manipulation, graphs and maps. In CD-ROM format (probably one would be enough), this type of Census compilation would be aimed at private users who want a large part of the Census information together in one single medium, which is easy to use; the price therefore, will be reasonable for this group. Approximate date of availability: during 2004.

b) **Pre-established ensemble of tables, but much larger due to the territorial detail into which they go:** up to section level and even reaching street and block level for digitalised content sections. The cartographic support will be greater, including street maps, outlines of all sections and the content of some of them. In DVD-ROM format or similar, this second type of Census compilation will be aimed at Public Administration Units that require highly detailed geographic data and companies that make commercial benefits from using this material. Approximate date of availability: during 2004.

7. TAILOR-MADE REQUESTS

Even though the ensemble of dissemination products listed up until this point is fairly complete and flexible, there will always be a long list of requests that will have to be answered to in a tailor-made way.

The main new feature will be the possibility of placing these requests on the Internet. In fact, this channel is the most advisable, both from a cost point of view and, above all, in terms of deadlines (corresponding tabulations are created automatically from menus shown on the screen).

In order to answer these requests quickly, as well as those that arrive via more traditional routes, the Census information will be stored efficiently using *datawarehouse* techniques.

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5. Promotion and marketing

The high absolute cost of Censuses can only be truly justified if maximum use is made of their enormous potential for information.

It would not be worth designing a comprehensive and modern means of dissemination or cutting the deadlines substantially if the design were not able to report its existence or transmit its usefulness.

For these reasons, special attention will be paid to the justified promotion of census dissemination; adequately combining advertising means with an adequate distribution policy that is either free or low costs (with special attention paid to groups such as: centres of education, associations, SMEs, town councils, General State Administration).

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6. Conclusions

- The 2001 Census dissemination will be flexible, comprehensive and above all, quick.

- Less quantitative weight in the formal printed *publications;* in return, the few quantitative publications released will be more bright and colourful and more informative.

- Many of the dissemination products will be available on the Internet, whether free or at a price.

- The geographic sub-products will play an essential role, both separately and as an accompaniment to the Census data compilations.

- In some products (for example the data compilations on optical disk), specific versions will be created for different types of user.

- Census promotion should be encouraged, so that no potential user of Census information fails to use it due to ignorance or a lack of access to the information required.