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POPULATION REGISTRATION SYSTEM AND VITAL STATISTICS IN FINLAND

BY

POPULATION REGISTRATION CENTRE, FINLAND

Contents

The population register systems of all the Nordic countries (Finland, Sweden, Norway, Denmark and Island) are technically advanced. Their high quality is guaranteed by technical solutions, long traditions and the requirements set by the Nordic welfare states to the basic registers of society.

Population Register Centre is responsible for the population information system in Finland in co-operation with local register offices. Statistics Finland is responsible for the statistics. Statistics Finland and Population Register Centre are two independent authorities.

The Finnish population information system is a basic administrative register. Because of advanced data-processing technology it offers a flexible data system service to the whole public sector. Statistics Finland is one the most important user of the information system. Lately, more and more attention is being paid also to services to the private sector.

A brief history of the population information system

A population register was started in Finland as early as in the 16th century when Finland was part of the Kingdom of Sweden-Finland. The system was started at the same time by both the church and the State. The information was needed for both taxation purposes and the army.

Up to the middle of the 20th century, the population register was maintained by making the necessary entries in lists, or books, maintained by the church and the State authorities. The entries were made by hand.

After the middle of this century, in the 1960s, the lists were replaced by card files.

The computer age started at the beginning of the 1970s, when the Population Register Centre was established. **In 1973 all the information contained in the card files of the local authorities at a given time was transferred to a central computer.** A uniform central register was established making use of the register on social security data. After the transfer of the information, it was checked for many years by means of various logical checks.

At first the register only contained information on persons. In addition to this personal information, the register also contained the necessary identification data on real-estate units.

In 1981 the information content of the central register was extended. Using the information collected by means of a census, comprehensive basic information on all buildings, apartments and industrial and business facilities (premises) was added to the register.

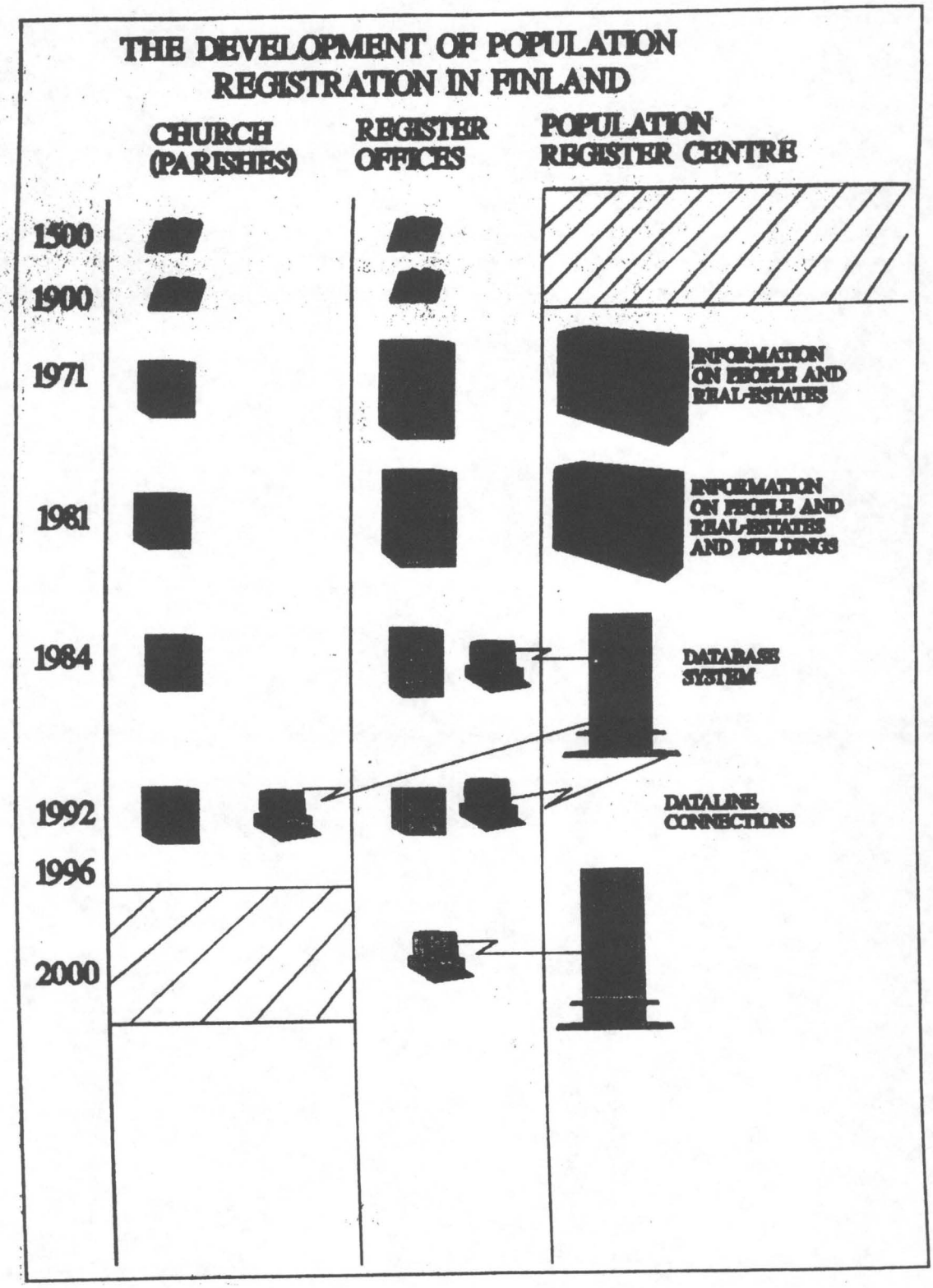
Two years later, in 1983, the technical solution of the register was updated by changing the system from so-called sequential files on magnetic tapes to a so-called data-base form.

In 1986 the first local State authority, the Register Office in Helsinki obtained terminal access to the central register and by 1992 all the 59 local authorities were connected to the central register by terminals. Terminal access enables the local authorities to enter amendments in the files and to print out data that they need e.g. for information service purposes.

Today the church offices still have some official duties in population registration in the future, after some years the church offices will give up their duties in population registration.

In the beginning of this year some plans have been made for comprehensive technical reform of the present database system.

The history of the system is presented in picture number 1.


THE DEVELOPMENT OF POPULATION REGISTRATION IN FINLAND
CHURCH (PARISHES)
REGISTER OFFICES
POPULATION REGISTER CENTRE
1500
1900
1971
1981
1984
1992
1996
2000
INFORMATION ON PEOPLE AND REAL-ESTATES
INFORMATION ON PEOPLE AND REAL-ESTATES AND BUILDINGS
DATABASE SYSTEM
DATALINE CONNECTIONS

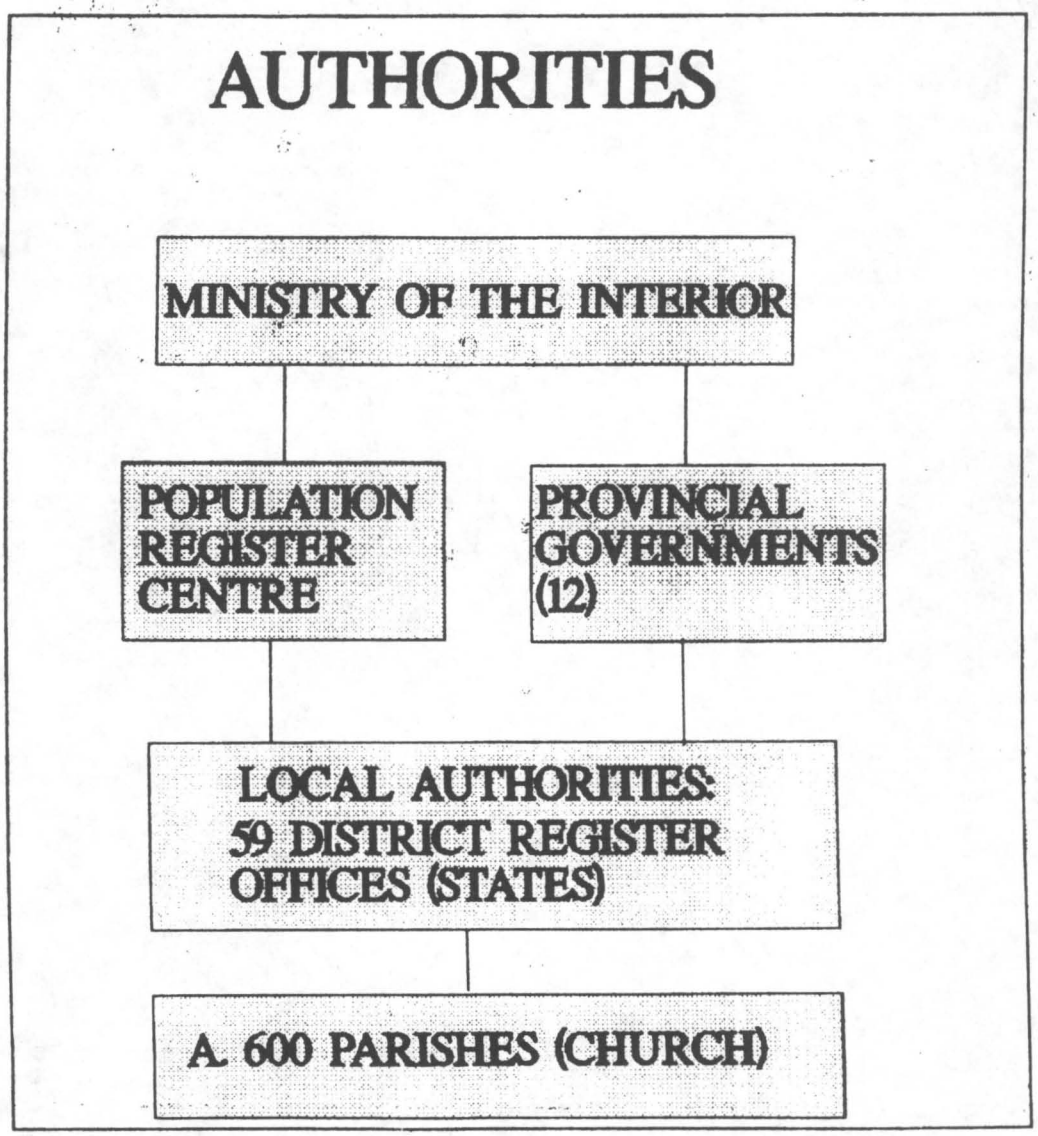
Picture 1.

Present organization

The Finnish population information system operates subordinate to the Ministry of the Interior. The development and control of the system is the duty of the Population Register Centre. The personnel of the Centre is about 100.

The local authorities are the 59 District Register Offices, which are State authorities. Their total personnel amounts to about 600. For historical reasons, the parishes of the Evangelical-Lutheran Church and the Greek-Orthodox Church have certain duties relating to the maintenance of the official register for a few more years.

The organization is presented in picture number 2.



The registration tasks

Practical registration tasks are the duty of the local level.

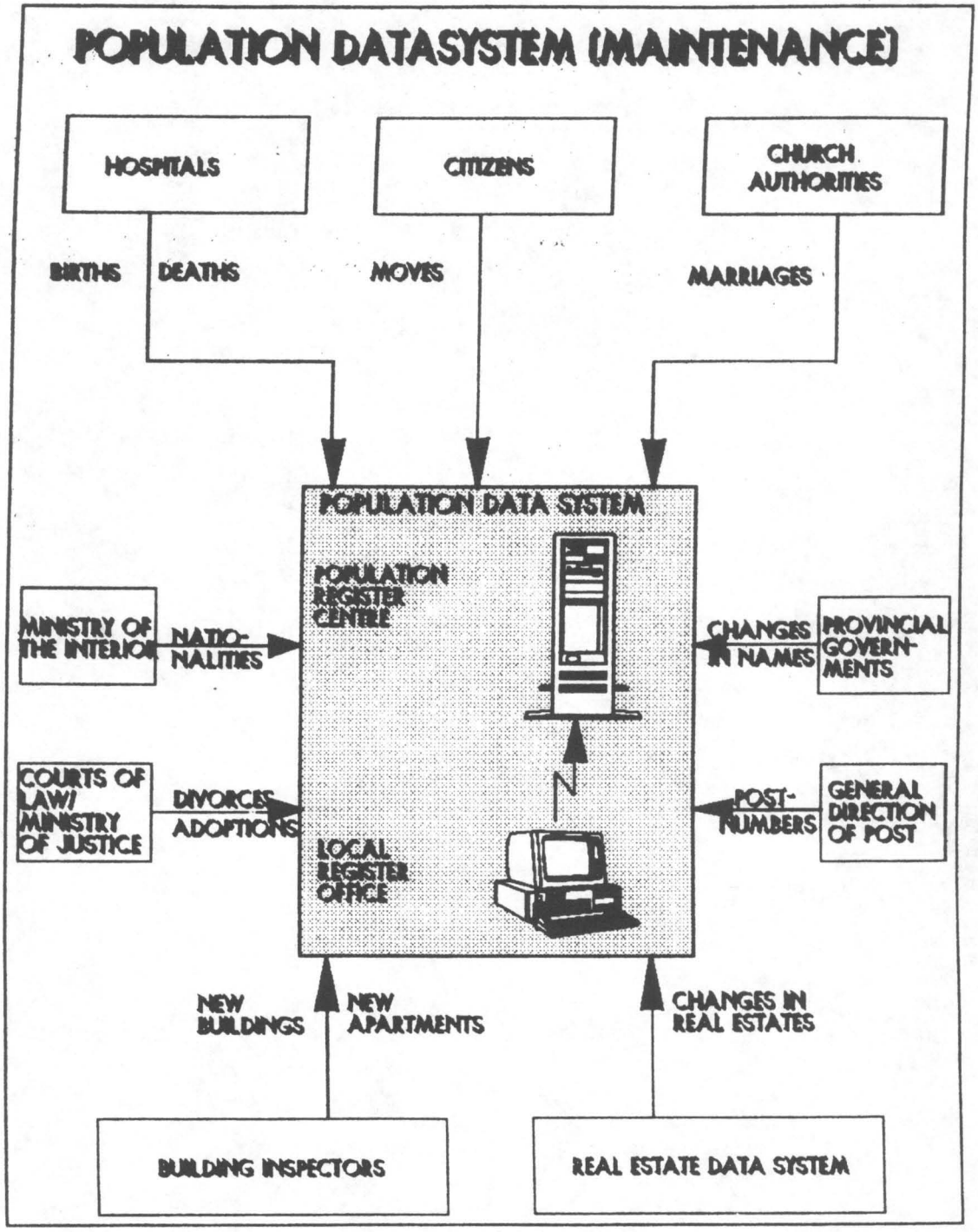
The majority of the information finds its way to the register through the Register Offices. For example the registration of births and deaths is the task of the Register Office. When a child is born the hospital sends the information in a paper form to the Register Office. The office stores the information immediately and the information will be registered in the central computer-register during the next night.

The registration of deaths goes the same way. The registration of move (address changes) goes also the same way, but the information is sent to the Register Office by the private citizens.

The information on divorces and adoptions are sent to the register authorities by courts of law.

The aim in the future is that the information will be stored in the register in machine-readable form right "at the source of the information". This will simplify and speed up the information flow and also reduce the costs incurred. Even at present almost half of the information on buildings is already obtained in machine-readable form and the aim is to extend this system to all the real-estate information within the next three years.

The maintaining of the system is presented in picture number 3.


POPULATION DATASYSTEM (MAINTENANCE)
HOSPITALS
CITIZENS
CHURCH AUTHORITIES
BIRTHS
DEATHS
MOVES
MARRIAGES
POPULATION DATA SYSTEM
POPULATION REGISTER CENTRE
MINISTRY OF THE INTERIOR
NATIO-NALITIES
CHANGES IN NAMES
PROVINCIAL GOVERN-MENTS
COURTS OF LAW/ MINISTRY OF JUSTICE
DIVORCES
ADOPTIONS
POST-NUMBERS
GENERAL DIRECTION OF POST
LOCAL REGISTER OFFICE
NEW BUILDINGS
NEW APARTMENTS
CHANGES IN REAL ESTATES
BUILDING INSPECTORS
REAL ESTATE DATA SYSTEM

Picture 3.

Information contents

The name of the information system, the population information system, does not describe the information content of the system very well. As noted above, the system contains information not only on people but also quite comprehensive information on buildings, apartments and industrial and business facilities (premises). In addition, the system contain basic information on all real-estate units (land areas).

The most important part of the population information system is, nevertheless, the information on persons. The system contains information on all persons permanently resident in Finland as well as on all Finnish citizens residing abroad. The information on persons covers e.g. the following: name, date of birth, personal identity code, municipality of birth, municipality of residence and postal address, citizenship, native language and information on marriages, children and parents.

The information on buildings includes e.g. identification information as well as information on their characteristics and apartments. The information on the characteristics includes for example the floor area, construction standard, year of construction, purpose and number of rooms. The real-estate information includes the real-estate identification number and owner.

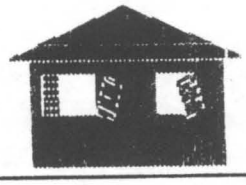
A summit of the information contents is presented in picture number 4.

DATA CONTAINED IN POPULATION SYSTEM

PERSONS
Names
Personal number (date of birth+number)
Citizenship
Place of birth
Mother tongue
Address
Marriage
Children
Parents

REAL ESTATES (LAND AREAS)
Identification
Owner

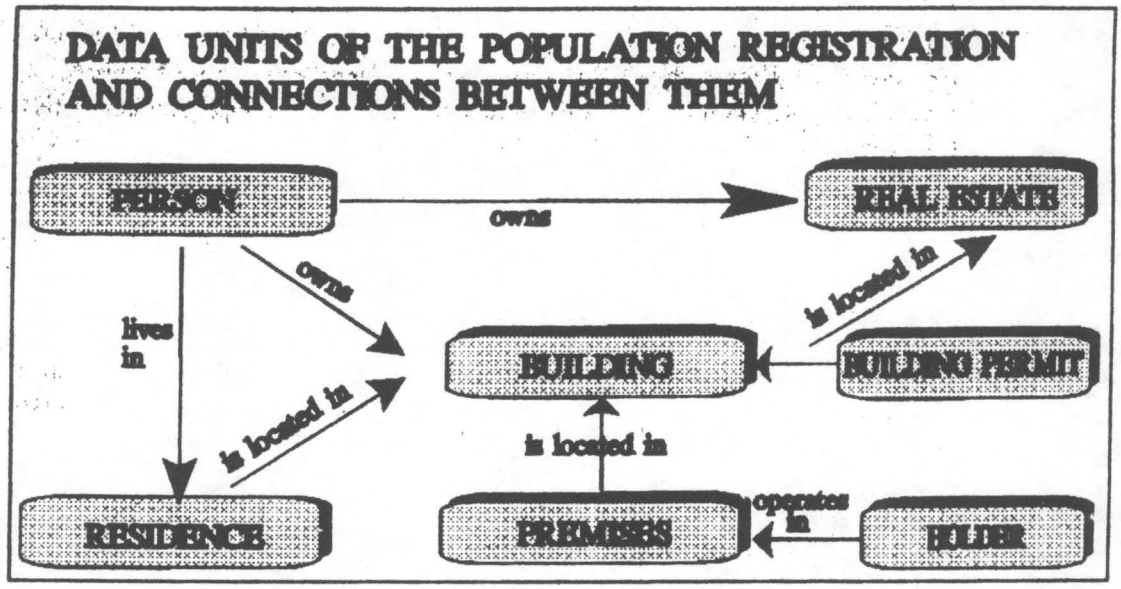
BUILDINGS AND APARTMENTS
Identification
Qualities
- the year the building was ready
- area
- equipments
- heathingsystem



Picture 4.

The Finnish population information system is a so-called integrated database system. It means that there are links between the different data units. With the help of these links the register can be widely used.

Picture number 5 shows the data units and connections between them.



Picture 5.

The connections between the data units can be created by using the following codes: personal identity code, street address and flat number, coordinates of buildings, building code and real-estate code.

All data units and codes have been defined and accepted as standards to be used generally in the whole public administration. Besides numerous technical standards the system is based on use of many other standards and statistical classifications. This way the information can be automatically transferred to other data systems.

Technical aspects of the population information system

The central data storage of the population information system is the Central Population Register (CPR) with an IDMS network data base. The size of the data base is c. 9 Gb and the present ISDM version is 10.2. A transfer to version 12.0 is presently under preparation and it will be introduced by the end of this year.

The CPR is divided into three logical areas, the registers on persons, buildings and real-estate. At present the central register contains data on c. 7.1 million persons, c. 2.1 million buildings and c. 2.1 million real-estate units. The total number of records is c. 100 million.

The CPR is updated daily through batch processing and the annual number of updates amounts to over 2 million with c. 1.0 million for personal information, 0.9 million for building information and c. 0.3 million for real-estate information. In addition, there are several million intra-register updates.

The batch-based application programs of the CPR are in COBOL. The application genmerator of the direct-access inquiry applications is ADS/O and TDMS is used for the display-unit management of transaction processing.

The aim is to have as many transactions as possible stored at the information source by local authorities and for example hospitals.

On the local level, the information is stored in the counties by Register Offices in VAX environments. The conversation between transaction processing and the IBM IDMS data base is realized through an APPC/LU 6.2 connection. The amendments are transferred daily to IBM to be registered in the CPR.

Amendments created outside the Register Offices are more and more often handled in the form of data transmission and an EDIFACT electric data interchange is being experimented with.

The inquiry systems of the CPR have about 6,500 direct-access users, who are connected to the CPR through IBM 3270 by means of service networks. The service networks are mostly based on the DECnet/SNA gateway of the VTKK Group Ltd.

Several different directories have been built into the CPR to support the inquiry system services. In order to improve the identification of a person, a name directory was created at the end of the 1980s enabling a person to be identified by name only. In the organization of the directory and the software construction, special attention was paid to a short response time. The response time of the system is very short, which has, in part, made it possible to arrange a nationwide address service in Finland. There are altogether 13 address-service points in Finland equipped with terminals with direct IBM access to the CPR.

Custom-made inquiry systems have been constructed for certain authorities, but normally direct-access information management is based on information-package systems serving several customers.

Special attention is paid to the dataprotection and security of the CPR.

Use of the system

The information system is widely utilized in both State and municipal administration, courts of law and in the private (business) sector.

So far the main utilization of the information has been in State and municipal administration. Different authorities need correct information on citizens for their decision-making. This information is available in the population information system. The information is accorded public reliability. This means that the information is considered reliable unless proven false. The quality level of the information is quite high because of various checks, but also because any errors are quickly revealed when the information is used.

The most important single user of the information are the election authorities. Population register information is used in all elections in Finland, Parliamentary, Presidential and municipal elections, both when listing those entitled to vote and when mailing election information. This of course presents a high quality requirement for the information.

The fields of administration using the information include for example police administration, social insurance, pension institutions, unemployment insurance, social security, taxation and the maintenance of other registers such as the vehicle register. A significant user group is the courts of law, which use the information when making decisions concerning people, such as divorces, or when handling various application matters such as mortgages or real-estate registrations. The information is also used when granting passports and personal identification cards.

Statistics Finland is a very important user of the system. This matter i descrided later on (see page 13).

The information is more and more often used also for research purposes for example in the field of public health. Other important uses include education, construction and regional planning.

The information on persons, buildings, dwellings and business premises can also be presented on map and connected together with other numerical data on the basis of coordinates of buildings. In the sampling of data e.g. municipality, village, part of a town and postal code area can be used as a basis of areal division. In the near future the area can be also defined freely on the map.

The information obtained from the population information system is used widely all over the society in many spatial data systems: systems for map production, census information system, forest information systems, environmental information systems, facility management systems, optimizing transport and distripution, address and traffic systems, community and regional planning and health research.

A quickly increasing user is the private sector, which needs the information for example for direct advertising purposes and to maintain their customer registers up to date.

Forms of information service

The customers are offered reliable and up-to-date information in many different forms: direct access inquiries, in machine-readable form, on paper or over the telephone. It is also possible to devise new forms of customer-specific information service complying with the specific needs of each customer.

Customers who regularly need individual information in their activities can be given a right to direct-access inquiries to the population information system. When looking the information up himself through a terminal connection, the user has easy access to fresh and up-to-date information merely "by pushing a button". Direct-access use may for example improve the service of citizens as they no longer need to produce various certificates for the authorities. Direct-access rights are mainly granted to authorities. Data protection is secured by limiting the access to information really needed by the customer.

Information is also given by maintaining the registers of customers up-to-date through changes. This is how the majority of the registers of the public authorities are in fact maintained up to date. The changes are regularly transferred to the customer, who then updates his own register. The Population Register Centre updates not only public registers but also the customer and personnel registers of its customers.

Information may be given also in the form of various random or other samples. The information requested by the customer may be sampled from the register for various acceptable purposes. The sampling may be based on factors like persons, buildings and real-estate or their interconnections. Sampling is carried out for both public administration and the private sector.

A traditional form in which information is given are varios certificates and extracts. Annually, the population register authorities give the citizens a large number of different certificates and extracts, which private citizens need for example when dealing with the police, the courts and the social-welfare authorities. By means of certificates and extracts a person can prove to the authorities his own personal information and information about his family relationships. This form of information is decreasing and it is being replaced by the other form of information.

A new type of information is services by telephone. The most popular telephone service is a so called Address Information Service. It is a public service for authorities, business companies and private citizens. To make a phone call to this service costs 2 US $/1 minute. Every day about 2.000 phone calls will be made and answered. In the service the addresses of private citizens are delivered for those who need that information.

Whenever information is given out, the needs of data protection and data security are always taken into consideration.

Statistics Finland as a user of population information system

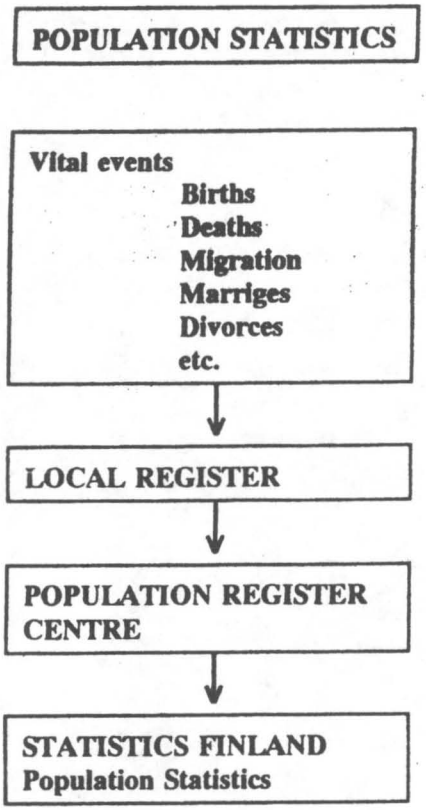
Statistics Finland is the state authority responsible for the official statistics in Finland. The number of employees in the office is totally about 700.

Statistics Finland has up-to-date information on the state of Finnish society. Statistics are compiled on subsect fields as living conditions, prices and wages, education and research, economy, labour force and **population.**

One of the most important statistics is the one of population. Population statistics consist of following parts: population structure, vital statistics, family statistics, life tables, population prosection, population studies and cause of deaths statistics. Most of the statistics can be issued also by municipality.

Population statistics are produced maincy from the data in population information system. The data is sent from Population Register Centre to Statistics Finland in a machine-langlage form every week.

The system is described in pictures 6 and 7.


POPULATION STATISTICS
Vital events
Births
Deaths
Migration
Marriges
Divorces
etc.
LOCAL REGISTER
POPULATION REGISTER CENTRE
STATISTICS FINLAND
Population Statistics

Picture 6.

MAIN DATA FROM POPULATION REGISTER IN STATISTICAL USE

POPULATION STRUCTURE
- Age
- Sex
- Marital status
- Language
- Nationality
- Religion
- Place of residence

BIRTHS
- Sex
- Mother´s
  - age
  - marital status
  - birth order
  - language
  - duration of marriage
  - place of residence

DEATHS
- Age
- Sex
- Marital status
- Language
- Place of residence

MARRIAGES
- Spouses´s
  - age
  - previous marital status
  - marriage order
  - place of residence

MIGRANTS
- Age
- Sex
- Marital status
- Language
- Place of residence
- Former place of residence

DIVORCES
- Spouses´s
  - age
  - language
  - duration of marriage
  - place of residence
  - number of children

Picture 7.

The information on statistics are supplied in the form of reports, statistical tables, charts and diagrams, maps, diskettes or magnetic tapes. The information is also registered in a system of databases (FINSTAT), with possibilities of direct access.

The vision

The population register system is continuously being developed to improve the services and to make it easier to use. Automatic data processing and electrical data transmission make more and more versatile services possible. Automatic data processing also speeds up the updating of the information and makes it even more up-to-date.

The challenges of the population information system are:

* to improve the service offered to data users and to promote direct access to information
* to promote the joint use of the population information in other data systems and to decrease the overlapping registration of information in the whole society
* to develop new customer-oriented applications based on ultimate technical solutions
* to promote electrical data exchange
* to make the information even more up-to-date and reliable
* to simplify the procedure of submitting information.

Information technology is developing at an amazingly rapid pace. One often feels that the potential offered by technology is not sufficiently utilized for the benefit of private citizens. **In Finland, the guiding principle of the population register has been to handle the affairs of private citizens as well as possible.** This is why the aim has been to make full use of the advances in automatic data processing also in order to benefit the private citizen in as many ways as possible.

So far the utilization has mainly concerned the information service aspects. It is possible that in the future new applications of the same methods will be used by private citizens in the reporting and registration of the information as well.

International co–operation

The establishment and the development of a population information system requires versatile expertise. The Population Register Centre is willing and ready for co–operation with different countries in the planning and construction of their population information systems. The forms of the co–operation can always be agreed upon separately in each case.

Ask for more information at

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Executive summary

The population register systems of all Nordic countries are technically advanced. Their high quality is guaranteed by technical solutions and long traditions.

The Finnish population information system is a basic administrative register. Because of advanced data-processing technology it offers a flexible data system service to the whole public sector.

The registration of the Finnish population started in the 16th century and it entered the computer era in 1970, when the nationwide Central Population Register was established. Data on buildings and dwellings has been collected since the beginning of the 1980s. In 1983 the technical solution of the register was updated by changing the system from so-called sequential files on magnetic tapes to a so-called data-base form. The Central Population Register contains all the information that is registered in the local registers.

The Finnish population information system operates subordinate to the Ministry of the Interior. The development and control of the system is duty to the Population Register Centre. The personnel of the Centre is about 100. The local authorities are the 59 District Register Offices with total personnel amounting to about 600. Practical registration tasks are the duty on the local level.

With the help of the latest technology, the population registrars maintain reliable on-line registers and offer modern information services.

The information registered in the population information system is obtained from private citizens and several authorities and organisations, such as municipalities, hospitals and courts of law. Several authorities use data-processing technology to feed their data automatically into the register. This way the information is always up-to-date and reliable.

The population information system contains the official information for the whole country on Finnish citizens and aliens residing permanently in Finland, and on buildings and dwellings as well as office and business premises and their holders. The system further contains data on real estate units.

The information on persons covers e.g. name and personal identity code, municipality of residence and postal address, citizenship, mother tongue and information on marriages, children and parents.

The connections between the data units can be created by using codes, for example personal identity code.

The central data storage of the Population Information System is the Central Population Register (CPR) with an IDMS network data base. The size of the data base is c. 9 Gb.

The CPR is divided into three logical areas. At present the central register contains data on c. 7.1 million persons, c. 2.1 million buildings and c. 2.1 million real-estate units.

Information contained in the system is given to the administrative authorities and courts of law as well as for statistical and research purposes. Business enterprises and private citizens may obtain for example address information.

The most important single use of the information are the election authorities. Information is also used when granting identification documents and passports. Statistics Finland uses the information when making population statistics.

The customers are offered reliable and up-to-date information in many different forms: direct access inquiries, in machine-readable form, on paper or over the telephone.