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## THE CIVIL REGISTRATION SYSTEM IN DENMARK

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## FOREWORD

A number of countries in Europe, primarily the Scandinavian countries, have expanded their population registers into a comprehensive database. As described in this paper "THE CIVIL REGISTRATION SYSTEM IN DENMARK", the register in Denmark now includes information about the population, housing, roads, and civil authorities. This register is a cost effective system widely used for administrative and research purposes. Unfortunately, the formal name of this register "The Civil registration System" may be confused with the same term as usually applied to the system for the registration of vital events.

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# THE CIVIL REGISTRATION SYSTEM IN DENMARK

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## INTRODUCTION

The administration of a public activity has always required some form of registration. Since the work of the public administration mainly involves dealing with people, it is necessary to be able to identify such persons and gain access to general personal data, inter alia, name, address, age, marital status, etc.

In countries which do not have centralized, computerized registration of the most common personal data, the public authorities must request the citizens to furnish the same data time and again. In consequence, the data of the different authorities is not only of poor quality, often it is not identical. This is because an updating does not take place regularly, but depends on the citizen's contact with the relevant authorities. Moreover, it is, for example, not possible to compile optimum nationwide statistics for development and planning purposes. The establishment of a centralized civil registration system is thus the basis for the creation of a streamlined and rational administrative infrastructure. This enables the public authorities to give the citizens the best possible service.

It is characteristic for present-day Denmark that the public authorities base their performance of their duties on an administrative infrastructure which focuses on the application of centralized edp registers, of which the Civil Registration System (CRS) contains general personal data on persons with (or who may have had) residence in Denmark or Greenland.

The centralized civil register in Denmark was set up on 2 April 1968 on the basis of the previously manually compiled municipal registers. The CRS, which serves as a national register, has thus existed for more than 25 years. The CRS Office of the Ministry of the Interior administers the system, which contains data on about 7.3 million persons, of whom about 5.3 million currently are residents of Denmark and Greenland. Furthermore, the register contains information about approximately 2.9 million dwellings, about 105,000 roads and about 3,000 authorities. The data content of the Civil Registration System currently amounts to about 25 Gigabyte which equals about 25 billion characters.

## HISTORICAL BACKGROUND

In Denmark, the registration of births, marriages and deaths, etc., has for centuries taken place in the parish

registers. An actual registration of the nation's population did not take place until 1924, when an act of parliament created local municipal registers.

At the time, several neighbouring countries had already established national registers. The reason the question became relevant in Denmark was the ever-growing public administration, especially at local government level where the rise in expenditure necessitated the collection of taxes, etc.

Moreover, the administration of the rationing scheme after the first world war required the establishment of a reliable population register.

It is characteristic for the act of 1924 that the municipal registers were not compiled for any specific purpose, but were meant to back up the public administration in general. The municipal registers should comprise all residents within the municipality and should be updated on a current basis. The main purpose was to meet the demand for personal data at the local administrative level, and then to service central government bodies and private civilians who enquired about current addresses, etc.

With reference to the act of 1924, executive orders and circulars were issued stipulating the rules for keeping the registers. The establishment of the municipal registers was based on a general census held in 1924. At the same time the keepers of the parish registers, traditionally the clergy, were requested to report data on births, names and deaths, later also other personal data, to the municipal registers.

The municipal registers were, until the creation of the CRS, based on 3 files: head cards, the exit-register for head cards, and the name file. The head cards consisted of a card for each family group living together or for a single person (above 15 years of age), and contained all the registered data on these persons, including the data required to compile voters' lists. The exit register contained the head cards on persons, who had moved out of the municipality or died, and the name file contained names and addresses and served as index to the head card file. Head cards and exit cards were sorted by address, the name cards by name.

With the exception of a number of minor points, this system remained intact until it, for several reasons, became necessary to get the legal authority to set up the centralized civil register, the CRS, which happened with the new National Registration Act dated 10 June 1968.

### **THE CIVIL REGISTRATION SYSTEM - PURPOSE**

The centralized CRS was created in 1968 by copying the contents of the manually kept municipal civil registers. There were two main reasons for the establishment of the CRS:

The ever-growing need for information about general personal data, especially addresses, and

The need for a general identification of individuals, which could be used throughout the public administration.

The latter became even more relevant in connection with the plans to introduce a centralized P.A.Y.E. (pay-as-you-earn) tax system, as the implementation of a CRS comprising a personal identification number system was an absolute precondition for the introduction of the P.A.Y.E. tax.

The purpose of the CRS was to administrate the personal identification number system and general personal data forwarded by the municipal registration offices to the CRS. Moreover, the CRS should supply personal data in a technically and/or economically suitable manner in compliance with the legislation governing registers and civil registration. In view of the steadily rising use of information technology this purpose has become even more relevant.

The CRS thus promotes greater efficiency and rationalization within the public as well as the private sector. The CRS ensures that work is based on a uniform data platform. The individual authority or company is exempt from having to collect and verify general personal data from citizens, who in turn are exempt from notifying changes of address, changes of name, etc., to a number of authorities and private companies, which instead retrieve or receive this information from the CRS. In general, the CRS functions as an index to the authorities supplying the data, i.e. the parish registers, courts, counties, local marriage offices, etc., since the personal data registered in the CRS is accompanied by information about the reporting authority.

The personal number scheme and the standardization of personal data, which is the result of the CRS, is a precondition for the execution of an expedient and rational legislation and administration in a number of public sectors which do not receive information directly from the CRS.

### **THE CIVIL REGISTRATION SYSTEM**

Since its creation the CRS has undergone numerous changes, including major alterations as well as minor adjustments. This is the outcome of the technological development and the changing demands to the system as well as changes in the co-operation with the offices involved in operating the system.

The main difference between the present CRS and the original Civil Registration System (1968) is that prior to 1978 data was stored on magnetic tapes, today it is stored on hard discs. This made it practicable to update information on a daily basis (instead of weekly) and make daily retrievals from the system, such that the freshness of the data and thus the quality of retrievals and enquiries has improved markedly.

Moreover, the CRS has become accessible by terminal (1981) for central government as well as for local government users, and the local civil registers can now report changes in the system via terminal (1983). In connection with the latest modernization of the CRS (1991) it has become possible for the suppliers of data via terminal to make a current update of the data in the CRS.

Terminal users can retrieve information about individuals either by entering the personal identification number or by searching using date of birth - perhaps name, or using the address or name alone. It is possible to use current as well as former names and addresses in the search. Via terminal access it is possible to search in the registers which the CRS encompasses. The most important are:

**The civil register;** contains current information about each citizen, cf. section 4.1, including the personal identity number. The register also lists former (historical) addresses, names, civil status and citizenship.

**The road system register;** contains current information on all roads in the nation. Each road is assigned a road code, a name and information about the road's administrative relationship, e.g. parishes, postal districts and voting districts. Via the road register the road code in the civil register can be filled out with road name, etc.

**The housing register;** contains all addresses in the country (dwellings) and localities sorted by address code and displays the housing code for the utilization of the dwelling. The housing register is used for extracts where it is necessary or practical to use the address as access to the register and to check whether people are moving to an approved dwelling.

**The register of authorities;** is an index of all authorities that the CRS is in contact with. The register lists the authority's address, telephone number and facsimile number. It also lists the municipalities' place in the general

public administration, e.g. in relation to courts, counties and police districts.

### **Personal data in the CRS**

The main rule is that people who live in Denmark legally for a certain amount of time must register with the national registration offices. This registration with the national registration offices/the CRS is necessary to obtain a personal identification number. Consequently, the CRS encompasses persons, who have lived in Denmark since 2 April 1968 and have registered with the national registration offices - in respect of Greenland since 1 May 1972, since the national registration act was extended to Greenland, which is a Danish province, in 1972.

The file on the individual citizen in the CRS contains information about identification number, name, address, marital status (including spouse), place of birth, citizenship, kinship (parents/children), declaration of incapacity, profession, membership of the Lutheran Church of Denmark, voting rights, municipal circumstances, registration notes and death. Changes in respect of name, address, civil status and citizenship are updated without old data being deleted from the CRS: it remains on file as historical data.

Persons who die, disappear, or emigrate from Denmark remain in the CRS, which is why it today contains information about 7.3 million people.

### **The personal identification number**

Everybody, who is registered in the CRS, receives a personal identification number. The identity number is unique to the person and thus functions as identification of each individual. Almost the entire public administration uses the identification number, inter alia, to avoid duplicate registration and errors in respect of a person's identity. The use of the identity number also facilitates the collaboration between the CRS and the public authorities receiving data from the CRS.

The personal identification number consists of 10 ciphers, six ciphers for the person's date of birth (i.e. two for the day, two for the month and two for the year). Then follows a serial number of four ciphers. Serial numbers below 5000 denote that the person is born in this century - whereas serial numbers of 5000 and above denote that the person was born in the last century.

The tenth and last cipher in the identification number is the check cipher. It discloses any errors in the identity number. The check cipher also indicates the person's sex, since an odd cipher denotes a male and an even cipher a female. A randomly picked identity number for a male born on 7 July 1961 may look this way: 070761-4285, with the first six ciphers referring to his date of birth and year

and the last four ciphers being the serial number, with the tenth, odd cipher denoting the sex of the person.

In connection with the allocation of a personal identification number, the individual has so far received a personal identification card. This ID-card has been issued since 1968 and serves three purposes: First, the individual person is advised of the allocated identification number; second, it is possible to check the data contents to the extent it appears on the card, namely date of birth, sex, name and address. Quite a number of errors in connection with the establishment of the CRS in 1968 have been found this way and corrected, including duplicate numbers and missing numbers.

Third, the personal ID-card could at its introduction in 1968 to some extent serve as an ID card - especially in connection with the introduction of the P.A.Y.E. tax system, as the individual employee must be able to prove the number to the employer - although the card's execution and contents cannot compare with a genuine ID-card.

However, the personal ID-card has become obsolete years ago and cannot be used as identification since address and name are not updated on a current basis. The name "personal identity card" was abolished in August 1995. The citizen will still be notified in writing by the CRS of any new identification number (naming infants, immigration and change of identification number (in case of error in sex and/or date of birth)).

### **Updating the CRS**

All national registration offices have terminal access to the CRS. Registration takes place via the national registration offices which via terminal link to the CRS forward the information received from citizens and the relevant authorities registering basic data.

Under the National Registration Act the citizens are obliged to notify the national registration offices of changes of address when moving within the country's boundaries and when moving to or returning from another country. In connection with information about naming or change of name, marriages, adoptions, divorces, etc., the national registration offices receive information from the public authorities which in the mentioned instances are responsible for registering basic data. The counties, for example, report information about adoptions, paternity acknowledgement, divorce, etc., whereas for example the courts report adoption annulments, paternity verdicts, declarations of incapacity, etc.

The citizens notify births, naming and certain changes of name and deaths to the parish registers. This information - and information about weddings, and membership of or resignation from the Danish state church - the national registration offices receive from the parish registers such

that in this instance a duplicate registration takes place because only the entry of births, names and deaths in the parish registers is considered legal proof hereof.

All authorities with which the CRS is in contact have been allocated a four-ciphered code. The codes are used for registration such that the CRS serves as an index to the authorities responsible for registering basic data. These authority codes are registered in the previously mentioned register of authorities. The authorities responsible for basic data are also obliged to report administrative changes, e.g. amalgamation of parishes, counties, etc., directly to the CRS, such that the register of authorities is up-to-date.

Current updating of the CRS takes place in an on-line updating system which means that the CRS will change the instance the terminal reporting in the national registration office takes place. This is especially a great advantage for the numerous other public authorities with direct terminal access to the registers of the CRS.

#### **UTILIZATION OF THE CIVIL REGISTRATION SYSTEM**

The utilization and operation of the CRS takes place in accordance with the statutory provisions of the National Registration Act, but it is primarily the act of 1978 on the registers of public authorities which is important for the utilization of the CRS.

The Registers Act was passed 10 years after the creation of the CRS, which means that according to the National Registration Act of 1968 it was the Minister of the Interior who set the rules for the utilization of the CRS. In order to ensure an appropriate development and use of the CRS a civil registration committee was formed to monitor the development and advise on principal questions in connection with civil registration.

The civil registration committee was abolished with the change of the National Registration Act in 1978 and the implementation of the register legislation and the creation of a general supervisory authority for registers.

The purpose of the Registers Act, and the Supervisory Authority for Registers authorized herein, is to guarantee the necessary protection of the individual citizen's private life and personal integrity in connection with the creation and utilization of public and private registers.

The Registers Act sets out general provisions for the operation of edp-registers including, inter alia, which data it is permitted to register and pass on, the requisite security measures and the admission to "own access"

Moreover, the Registers Act introduces the obligation to produce - after prior presentation for the Supervisory Authority for Registers - special rules for the individual register. The rules must comply with the stipulations of the Registers Act and this means, e.g. that only information

of material relevance for the performance of the authority's responsibilities can be registered.

The utilization of the CRS is thus subject to the Registers Act and more specific the National Registration Act of 1978.

The utilization of the CRS has increased steadily since the establishment in 1968, which primarily can be ascribed to the rationalization potential attached to applying the personal identity number to sort all kinds of personal data and collect updated personal data from CRS instead of having to collect information from the citizens. The CRS is used by the entire public administration in Denmark and private companies, including all the leading banks and insurers.

Public and private use of the CRS has become large scale since 1968 and today about 100 million personal data is supplied by data transmission and some 10-15 million terminal enquiries are made in the CRS annually. In view of the efficiency and rationalization gains of the private and public sector from using the CRS system and the ever growing utilization of CRS, the utility value of the Danish CRS system is estimated to add up to several hundred million kroner annually.

The fact that the utility value of using the CRS is markedly higher than the costs entailed can be illustrated as follows. An analysis of the outgoing mail from a bank revealed that the volume of return mail due to wrong addresses dropped from 3.2 per cent to 0.6 per cent (i.e., 2.6 per cent) in connection with using the CRS to update the bank's customer file.

A bank with one million customers forward an average of 10 million letters annually at an average postage expense of DKK 4.00 per letter. Hence, the bank has an annual postage expense account of DKK 40 million. A 2.6 per cent drop in the return mail volume will save about DKK 1 million in postage. To this should be added savings in administration of updating customers' address files, handling return mail and other expenses related to return mail, e.g. prints, stationary, envelopes, etc., which combined adds up to a substantially bigger share of the expenses connected with return mail.

A prudent estimate would be an annual cost reduction of DKK 5 million as a minimum for this bank. The expense of utilizing the CRS to update the customer file for 1 million persons amounts to about DKK 150,000 annually

Under the CRS subscription scheme about 9 million people are registered as being a bank customer, which cf. the above implies an aggregate saving of at least DKK 45 million for the banking sector when using the CRS to update customer files.

Similar exercises can be carried out for other areas of the private sector and for the public sector in general.

In general, there are three types of utilization of the CRS: direct terminal access to the CRS, extracts from CRS and individual data from the CRS.

### **Terminal access to the CRS**

All Danish public authorities can obtain permission to access via terminal the information in the CRS which is relevant for the authorities in order to carry out their responsibilities. The terminal access comprises nationwide search in the general CRS civil index, i.e. persons who live or have lived in Denmark since 2 April 1968 - for Greenland after 1 May 1972.

Another type of "terminal access" to CRS is on-line delivery of personal data from CRS to the authority's own edp application, where the authority's application calls up the CRS using the personal identification number as key.

Programme to programme communication is used in connection with the user's terminal solutions, when the CRS personal data is not available in the authority's own register. When using a terminal, the operator automatically retrieves data from the CRS. The data can then be entered into the authority's own register and /or be displayed on screen.

### **Extracts from the CRS**

With the exception of specially defined extracts from the CRS, extracts from the CRS have from the beginning been based on a standard extract system which executes so-called bulk extracts. These are made on a daily basis by batch runs in the evening.

Bulk extracts are available as status extracts, which means an extract covering a group of persons as it appears in the database at a given time, and as amendment extracts, which is current delivery of amendments to the group of persons by subscription. Daily amendment extracts are supplied to update public and private edp registers, inter alia, the civil tax register, the pension register (Labor Market Supplementary Pension Fund), the joint municipal registers, local government registers, public statistical registers, etc. There are currently about 150 subscribers.

Specially defined extracts are, inter alia: voters' lists for general elections, local government elections, parish council elections, EU elections, etc., parish lists of the members of the Lutheran Church of Denmark for use by the clergy, and extracts for research and statistics. Most of the extracts are supplied via telecommunication lines (file transmission).

In respect of statistics the extracts from the CRS are, e.g. used for current population statistics, which meant that

manual censuses ceased in the early 1980's. The CRS also forms the basis for demographic planning (schools, hospitals, etc.).

In connection with, for example, the calling of a general election, the CRS only needs two to three days to supply the data needed by the municipal edp facilities to compile and issue voters' lists and election cards, which means that a general election can be called at 18 days' notice.

Direct mail is a service offered by CRS to public authorities and in connection with public and private research and statistics projects. Research and statistics projects often target a special group of people, which has been chosen according to already defined criteria. In this connection, the CRS can offer the public authorities to extract the defined target group from CRS as well as mailing.

In connection with private research and statistics projects, the CRS can likewise extract defined target groups from the CRS and at the same time guarantee the anonymity of the individual. The envelopes are mailed with the Ministry of the Interior as sender and the private researcher or statistician is not told who receive the letters. People can avoid being contacted in connection with research and statistics projects based on extracts from the CRS if they notify the CRS office, which then register their wish in the CRS.

### **Specific data from CRS**

Specific data about individuals, whom the enquirer identify by using a combination of name and either address, personal identification number or date of birth, can be obtained upon request from the local registration offices which all have terminal access to the CRS and thus are capable of answering queries - irrespective of where the sought person lives at present. Private people cannot obtain an address if the citizen in question has requested it to be confidential, however, this does not apply to enquiries from the citizen's creditors.

## **6. FURTHER DEVELOPMENT OF THE CIVIL REGISTRATION SYSTEM**

An adaptation of the CRS system on a current basis is necessary in order to keep up with the technological development and changing user demands. If this is not carried out satisfactorily, public and private administrative entities will develop parallel systems for the collection of the same personal data, which is stored in the CRS, at a greater overall cost.

In general, the collaboration with the CRS has everywhere improved and rationalized private as well as public administrative procedures. An obvious activity in connection with the utilization of the CRS would be to abolish the attestation requirement in applications, etc., in those instances where the attested information appears

in the CRS, such that a search in the CRS via terminals could replace the attestation.

This raises the question whether the registration in the parish registers should be combined with the registration in the national registration offices. The argument for doing this is that you abolish one of two identical registrations, namely the registration of birth, naming, marriages, death, etc. These registrations are primarily entered in the parish registers, which then forward the data to the national registration offices/the CRS, which re-enters the data. A new procedure would also entail a mechanical printing of attestation from the CRS.

At the request of the users of the CRS the data contents of the CRS system might be increased, at first with information about separation, guardianship and custody. Later it might become relevant to extend the data contents in the CRS with other data.

An ongoing adjustment of the CRS on-line system is taking place to achieve a more up-to date graphical user interface by using client/server technology. By establishing a more user friendly interface the CRS system will be able to support the development of the municipal quick-desks and self-service terminals such that the citizens will receive a better service when dealing with the Public authorities.

The utilization of self-service terminals involves a considerable potential for rationalisations, but it also calls for stringent security measures such as electronic identification. The Ministry of the Interior has suggested that an electronic citizen card in the form of an ID-card (chip card) could be used with advantage as an electronic "key" and thus enhance the security in connection with the electronic self-service concept in the public sector.

The electronic citizen card should basically both visually as well as electronically only contain the citizen's name and personal identification number, since the remaining personal data can be retrieved from the vital public data bases when using the identification number. The electronic citizen card should also be provided with a PIN-code (or bio code, e.g. finger prints) to verify the cardholder. The electronic citizen card would thus become the citizen's unique electronic "key" to the public registers.

Further development of the CRS involves technical progress and greater quality. Technically, the CRS will develop in accordance with the requirements to adaptation arising out of the growing utilization of information technology and technological developments. In respect of quality, the CRS will develop through a steady increase of the data contents such that the data in the CRS supports the need for personal information in the public as well as private administration. Citizens and companies will thus experience a better service, including the use of self-service systems, increased and flexible extract options, etc.

## SUMMARY

The centralized civil register (CRS), which has existed in Denmark for more than 25 years, is a nationwide civil register whose purpose is to administrate the personal identification number system, to administrate general personal data reported from the national registration offices to the CRS, and to forward personal data in a technically/economically suitable manner in accordance with the Registers Act and the legislation governing civil registration.

The CRS promotes greater efficiency and rationalization within the public as well as the private sector. The CRS is likewise a precondition for working with uniform data. Accordingly, the individual authority or company is thus exempted from collecting and verifying general personal data from the citizens, who in turn are exempted from notifying change of address, change of name, etc., to a number of public authorities and private companies which instead retrieve this information from the CRS. In this way the citizens experience a better service when approaching the public authorities.

Since its establishment the utilization of the CRS has grown steadily, which to a large extent can be ascribed to the rationalization potential inherent in the use of a personal identification number system to sort personal data and obtain up-to-date personal information from the CRS instead of having to collect it from the citizens. In Denmark, the CRS is used by the entire public administration, all the leading banks and insurance companies, as well as in connection with research and statistics projects.

Since 1968, public and private users' utilization of the CRS has progressed considerably and today the CRS supplies about 100 million personal data via data transmission and between 10-15 million terminal searches are made in the CRS annually. Against this background, the utility value of the Danish CRS is estimated to run into several hundred million kroner annually.

As a result of technological and administrative changes, it is necessary for an ongoing adaptation of the CRS. If this does not take place, the public and private administration units will develop parallel systems to collect personal data at a great expense.

The further development of the CRS thus depends on technical development and greater quality, such that the CRS is abreast of the technological development, and moreover has a data base which supports the need for personal information in the public as well as the private sector.

The CRS, which is administrated by the CRS Office of the Ministry of the Interior, contains personal data covering about 7.3 million persons, of whom about 5.3 million are

current/living inhabitants of Denmark and Greenland. The aggregate data contents currently amount to about 25 gigabyte, corresponding to about 25 billion characters.

## Annex

### Data contents in the CRS:

Personal identification number

Address

Name

Civil status

Citizenship

Kinship

Civil affairs

Road registration data

Authority data

Registration of birth (date and place)

Membership of the Lutheran Church of Denmark

Declaration of incapacity

Municipal affairs

National registration data

Profession

Voting rights

Status data

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