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# Statistical Data Collection adjusted to an industry specific organization

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## *Summary*

Public administrative registers and Industry Specific Administrative Systems supplemented with survey data can be the basis for statistical data collection. A case from Transport statistics shows that a mix-mod survey design can ease the response burden for businesses and increase the frequency in the data collection. A tailor made data collection requires that the data collector has very good information about the organisation of the whole industry that is going to be described in the statistics. This information helps us to design a survey that is efficient for both the enterprises that has to answer the surveys and the data collector.

For many activities the enterprise needs a public permission to perform the activity, one example is taxi operation. These permissions are registered in an administrative public register. On the other hand has there been developed an industry specific electronic logistic/production systems that is used in the daily running of the business. For taxi operation are these administrative systems administrated from regional taxi central agency offices. These systems have production information concerning each car operating within the regional taxi central. The IT-system registers turnover, kilometres driven with and without passenger etc. This paper discusses a new data collecting system from these Industry specific systems, and how the information is combined with the governmental register information. A main challenge has been to have control of the statistical population as the industry specific register does not cover the production for the whole industry. Another important issue is to combine the register information from both the public and industry specific register with survey information.

## *Chapter 1.* ***Introduction***

This paper describes the data collecting system for taxi operation statistics in Norway. The new system combines register information with electronic data collection from the regional taxi central agency offices. The survey is starting this year with a quarterly data collection from the taxi central agencies, and will be completed with a yearly survey to the rest of the population by the end of the year.

Traditionally the data has been collected yearly by a paper survey. A taxi company is a small enterprise with 1-2 employees where the driver is usually the owner and is registered as an enterprise. These small companies do not have any administrative resources. Answering questionnaires usually also involve their bookkeepers, who often are small specialized companies. Every new questionnaire that is sent to them implies a rise in response burden for these small companies.

A way to ease the burden is to develop a data collecting system that uses information that is already electronically registered, in one or another form, among the businesses data systems or in public registers.

# Chapter 2. ***The statistics objectives and need of data***

## *2.1* ***Objective***
Statistics Norway is publishing a yearly statistics that gives some key information on the structure of the industry. The Norwegian Taxi Association also publishes some statistics covering the members of the organisation, such as the number of members and their turnover. There is a need to build better information of the transport market. This information is asked for by both the Bank of Norway (national bank) and the National Account.

## *2.2* ***Definition of the data need***
The data that is needed for the statistics has been defined by the subject matter division in cooperation with researchers and The Norwegian Taxi Association. It is also important to define the statistical population. In this project is the statistical population defined as all enterprises that have permission to operate taxi. The population is collected from the register of taxi licensees. The register contains all licensees. It is a link to the responsible enterprise by the organization number and/or the district in which the permission is valid. The register of vehicles gives information of the cars that are registered as taxi cars,  i.e. the number of taxi cars and information about the owner of the car. But as many taxi cars are leased by the operator it usually is the organisation number of the leasing company (owner of the car) that is in the register of vehicles.

The production in the industry is measured by the number of hours a taxi car is in operation, the length in km that a car is going with or without passengers and the turn-over.

## 2.3 **Where do we find the information needed?**
There is no single register information that gives information about the transport production within the industry. The total turn-over is possible to find for each enterprise that has a taxi license from the value added tax system. Transport of persons has its own tax rate – 8 %, but there is no information if the turn-over is from taxi operation or other business within the registered enterprise.

The information is known by the enterprises, and the traditional way to find this kind of information is to ask.  To find out if it was possible to organize the data collection differently we had to look in detail at how the taxi operation industry is organized in Norway.

The contact with the Norwegian Taxi Association informed us that most of the taxi central agency offices around in the country stored basic information in their logistics system. When a customer phones for a taxi, the requirement is stored in the system. Both the car/license that has produced the service and the prise of the service is registered. They also store the distance the car have gone with and without passengers. Many of the centrals also use the same software.

# Chapter 3 ***Organization of the taxi operation industry – NACE 60.22***

Every one who transports people for cash/payment in Norway must have a license from a competent authority – in Norway this is the County.  The holder of the license could be a person or a company. If it is a company, the operating manager (daily leader) must have the required qualifications defined by law. The license gives the holder the right and duty to operate taxi services within a region – license district. This is usually the same as the county. A taxi car can have at the most 8 passengers. In some occasions the authority can give a license with the right to transport up to 16 passengers in the same vehicle. All licensees are tested before approval for provision of needs. The license also states whether the holder has to be a member of a taxi central or if the taxi could be operating from the place of living. All approved licensees are registered in a public administrative register with licence number, link to organisation number of the holder and the name of the holder.

Taxi operation services in Norway consist today of 6500 enterprises. Totally has the Department of Transportation given approval to 8000 licensees. These enterprises operate 6900 cars and about 1000 minibuses. It is estimated that the industry produce about 12000 man-labour per year. Figure 1.

1100 of these enterprises are operating locally from the place of living to the owner. 5400 enterprises are coordinated thru 227 Taxi agency offices[1]. Attached to these centrals are often different kinds of common purchase companies. The companies could for example buy gasoline, give service to the car or buy/own cars collective for the members of the taxi central. On the other hand have large public users of taxi operation build up coordinating offices for buying patient transport for hospitals etc.

There are 5 different software vendors that has installed and/or developed the logistics system used by these centrals.

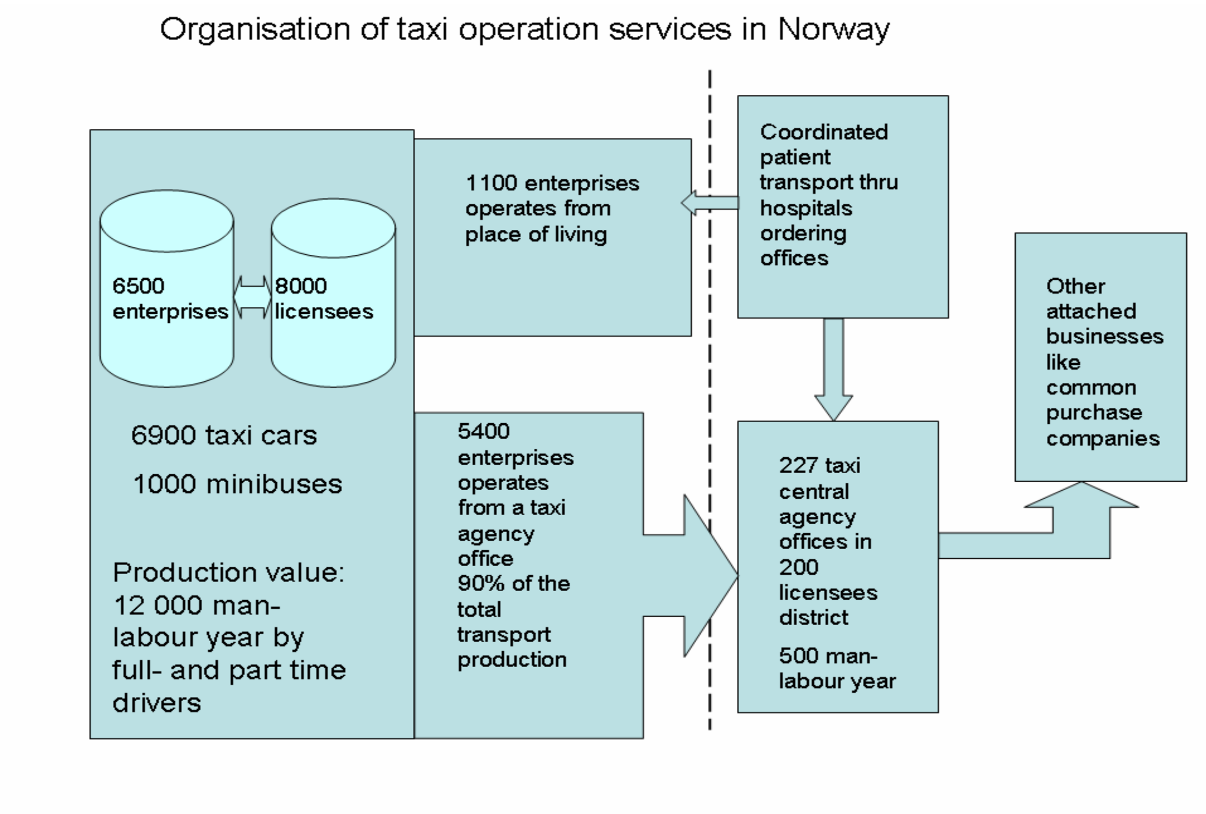


**Figure 1.** Organisation of taxi operation services in Norway[2]

[1] NACE code 63.211 Central agencies for goods and transportation procurement in the Central Register of Enterprises and Establishments

[2] Kilde: Jørn Bertelsen, Norges Taxiforbund

# *Chapter 4.* **Definition of the statistical population**

The statistical population is defined as all enterprises that are classified within activity class NACE 60.22 Taxi operation. First there has been a need to see if this population corresponds to the taxi licence register.  A link between the licence register and the Central Register of enterprises and Establishment gives information of all enterprises with a taxi license. The license register also states if a holder of the license has to be a member of a taxi central. However, there are no links in the license register directly to a Taxi central and CRE. An old overview is available from the Taxi association. It has therefore been necessary to develop routines to update these links by asking the taxi central agency offices witch taxi enterprises that are connected to the central. This updating has in the future to be done at least on yearly basis, but in some time we hope the public licence register will be complemented with the information.   The information is essential; as it helps us to know for which taxi enterprises a single taxi central can report production data.

Another challenge is that taxi central agency offices can operate other services outside the statistical population, for example operating in NACE class 60.21 (other scheduled passenger transport - transport of school children) or 60.23 other land passenger transport on contract, i.e. touring cars.  The data extraction from the IT-systems in the taxi central agency offices therefore has to define exactly all units they are reporting for.

Figure 2 illustrates these main challenges in defining the population. The survey is designed as quarterly reporting from the centrals for all their production, and a yearly reporting for the rest, i.e. taxi operation from the place of living to the holder of a license.  The size of the yearly survey has not yet been decided. As soon as there is a full updating of the enterprises that operates from a taxi central could the remaining enterprises be analysed thru information in the VAT-register. There are indications that these enterprises are small, and we hope that the yearly survey could be easily stratified by region. This work is going on for the moment and has to be finished by the end of the year. The data collecting from the taxi central agency offices is starting from the 1. Quarter of 2007, and the yearly survey is going to be conducted by the end of this year.

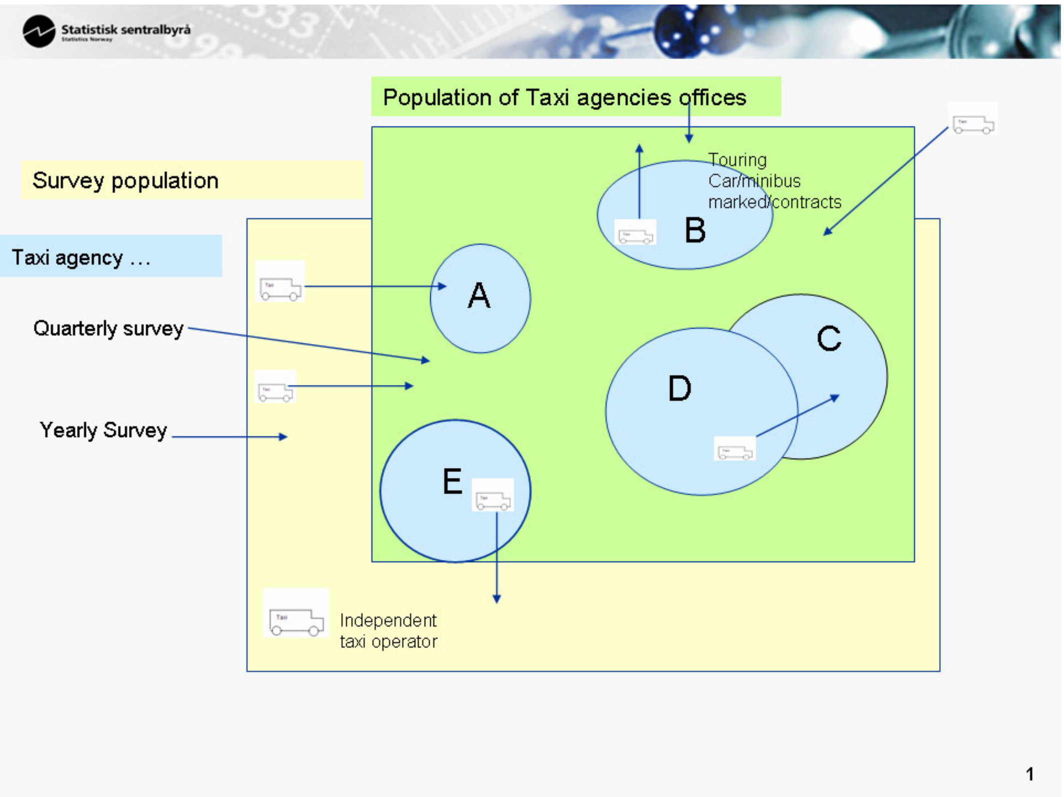


**Figure 2.** The survey population and the population covered by the taxi centrals

# *Chapter 5* ***Suggested organization of the data collection***

The data collecting system has been built up by using the Altinn-portal. Altinn is a common Internet portal for public reporting in Norway. A short description is given in appendix 1. [3]

Figure 3 illustrates the organization of the data collecting system.

The register of taxi operation licensees and the CRE are linked to identify the statistical population. It is the organization number from the CRE that is the link key. Phase 1, 2 and 3 in the figure

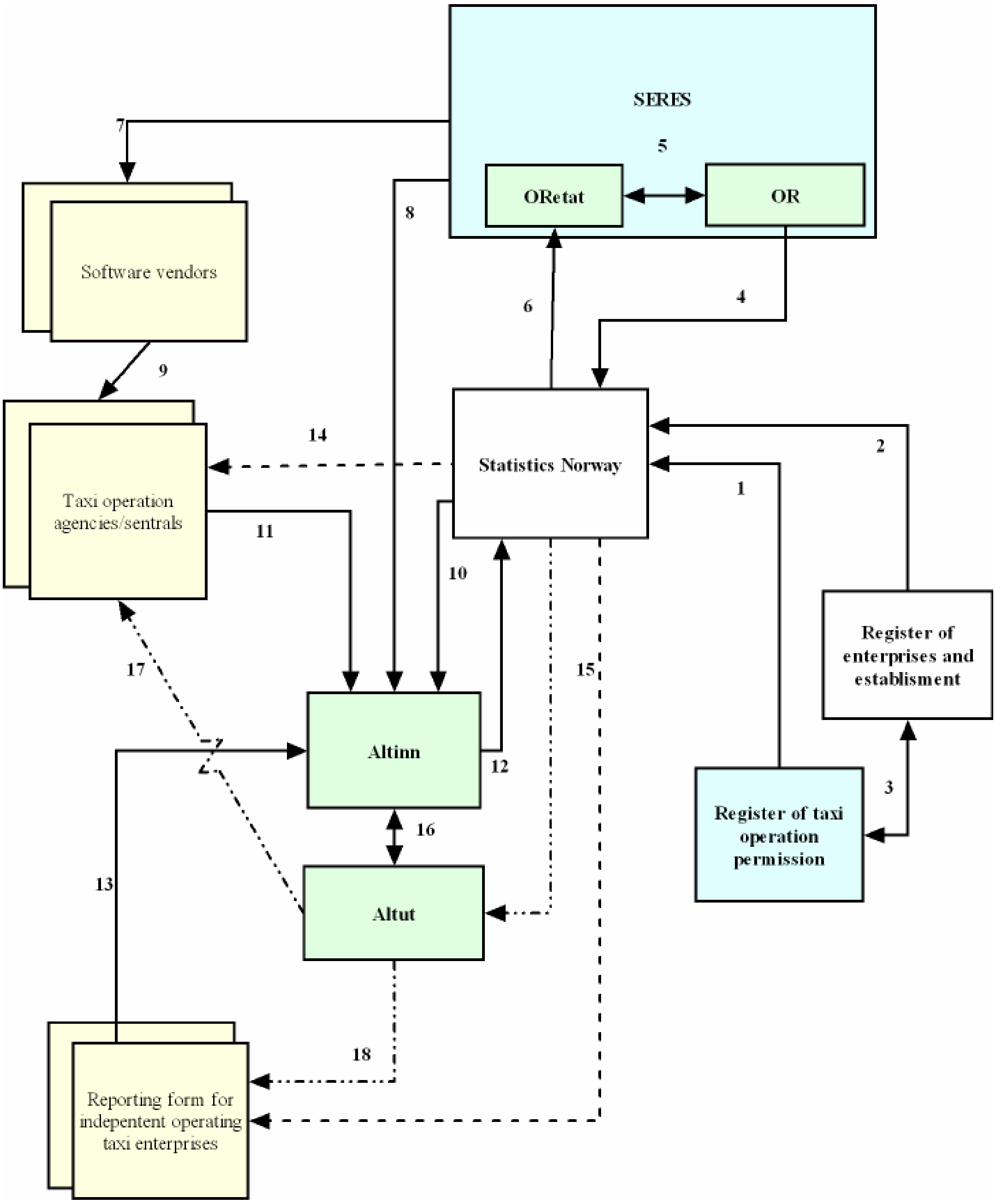


**Figure 3.** Organization of the Data collection

[3] Se also www.Altinn.no

The questionnaire has been implemented in the Altinn- portal. As the enterprises are obliged to answer the questionnaire, the data must be registered in *The Register of Reporting Obligations* – OR. Appendix 3.

When a form is implemented in Altinn is the metadata that is needed to define the form is registered in the metadata base SERES (see 5.1.). The Altinn-portal uses the metadata registered in OR/Seres when a Altinn-questionnaire is developed. From the database is it possible to create a XML-specification of the data request and the XML-specification is published thru the Altinn-portal. All software vendors can download the XML-specification for all public forms registered in OR.

In Appendix 4 is a short extract from the taxi operation questionnaire specification. The whole specification could be downloaded from:
http://w2.brreg.no/oppgaveregisteret/spesifikasjon_skjema.jsp?skjemanr=1220.

## *Chapter 5.1* ***SERES***

The Norwegian SEmantics Register for Electronic Services (SERES [4]) is an IT system and information model repository for promotion of semantic interoperability in the public sector. It is based on the idea of establishing a coherent information model described in an easily comprehensible and commonly accepted and used modelling language, namely UML. The system is implemented as an Internet-based multi-user, multi-layer Java-application (J2EE). Users from any public institution may have access to SERES.

Only one of the UML diagram types is used, the class diagram. The data types are called semantic types and are organised as a taxonomy starting with the set of Core Data types from UN/CEFACT. The information model is composed of a set of domain models that may have different levels of harmonisation with other domain models and varying adherence to an agreed set of modelling guidelines. These guidelines require that information classes are directly or indirectly related to a harmonised core information model and that all data types are semantic types.

Document models are extracted from the information model and are combined with format elements to form message specifications. Each semantic type is directly or indirectly connected to some format element. A message specification reflects the structure and semantics of the corresponding document model and employed format element set. Dublin Core-type metainformation is used for administration and tracking of individual model elements. The resulting specifications are published on a web site available for all.

## Chapter 5.2 **Software vendors**

Software vendors can now download the XML-specification and implement it in the logistics system used by the Taxi central agencies (activity 7 and 9 in figure 3). See appendix 4. The centrals that do not have direct reporting possibility can report by filling inn an electronic form in Altinn. The same form can also be used by independent taxi operators that is not participating in a Central, i.e. those enterprises that according to the plans are going to report once a year.

## Chapter 5.3 **Reporting of data**

The taxi central agency offices receive a letter from Statistics Norway that give some information of the survey and log on information to Altinn. To the quarterly survey, there has only been developed an electronic form. In appendix 2 there is a copy of the electronic form developed in the Altinn-portal. For the yearly survey we see a need of a paper survey as there are some enterprises that do not have Internet connection.

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**4** SERES Short Description by Even Thorbergsen, Brønnøysund Register Centre, Norway May 2006

Altut is a new possibility in the electronic portal. This service gives Statistics Norway possibility to send electronic information to a specific enterprise. The connection is also secure.

Altinn is used by many different public authorities in Norway. It means that the users get familiar with the user-interface and know how to use the system. Another advantage with Altinn is that the users of Altinn can either fill in the forms directly in the Internet portal or they can use their own IT systems to transfer data, for example salary and accounting systems or a year-end accounting package. The companies' own IT systems transfer pre-filled forms to the portal through a simple interface where subsequently the forms can be completed and signed in the portal. During the time the software vendors develop these routines can a respondent fill inn the Altinn-form manually by using an on-line Internet connection with Altinn.

# Chapter 6. **Further development and challenges**

An important task that so far not has been decided is the design of the yearly survey. There is also a need to build up knowledge concerning the development of the response burden for the enterprises. In the project has there been developed new samplings, survey and production routines. We assume that this will lighten the response burden, but we do not know. Statistics Norway has developed a set of questionnaires to measure the perceived response burden[5]. We hope that it will be possible to start collecting this information from the first yearly survey. Analysing this information with the same information collected from the taxi central agencies will over some time give information and knowledge if the response burden actually has dropped.

Some years ago, value-added-tax was introduced in taxi services, with a tax rate of 8 %. It would be valuable to use the turn-over data in revision of the collected data, and in updating of the statistical population. This information could also be used in the design of the yearly sample, i.e. give background information before the sample size is decided.

The work has shown that it will be a challenge to always have good control and updating routines of the statistical population. As statistical data is collected from a few Taxi central agencies Statistics Norway always has to know which enterprises that are a part of a taxi central, and which are not.

## *References:*


SERES Short Description by Even Thorbergsen, Brønnøysund Register Centre, Norway May 2006

Jørn Bertelsen, Norges Taxiforbund

Runar Kjellin, drosjelovgivning gjennom tidene, Norges Taxi forbund

Kollektivtransporten har et statistikkproblem, Eivind Frøysadal, Transportøkonomisk Institutt

Markedsorientert statistikk for kollektivtransport, Norheim og Frøysadal, Transportøkonomisk Institutt

http://www.transportloyve.no – Information about licensees in taxi transport (only in Norwegian)

Developing Methods for assessing perceived response burden, by Hedlin, Haraldsen, Dale and Jones


[5] Developing Methods for assessing perceived response burden, by Hedlin, Haraldsen, Dale and Jones

Appendix 1:

## Short description of the Altinn- portal

### Background

Each year Norwegian enterprises complete a series of public reporting forms in order to satisfy the public need for information. Surveys indicate that Norwegian enterprises spend over 7300 full time equivalents on statutory reporting, just to Central Government agencies. As a measure to ease the burden of public reporting the transition to electronic reporting is of high importance in public trade- and IT policies.

In 2002 the Norwegian Tax Administration, Statistics Norway, and the Brønnøysund Register Centre joined forces in order to create a common Internet portal for public reporting. The portal was launched in December 2003 under the name Altinn, and has been in full operation since.

### The use of Altinn

More than 100 different public forms are available and more than 15 million forms have been submitted through Altinn. The amount of compulsory forms submitted electronically has thus grown significantly since the launch of Altinn.

Efforts have been made to make the forms as easily accessible as possible. The users will automatically get a list of forms on screen when deadlines are imminent and, at the same time, get necessary online guidance on what forms to send to which public agency. Altinn automatically enters all relevant information into the forms based on the information contained in existing public IT systems and registers. The forms are dynamic so there is no need to answer questions that are not specifically related to you.

### An open, accessible and secure solution

Altinn is open 24 hours, 7 days a week (24/7)  solution, which gives high flexibility for the users. It allows users the opportunity to use the solution anywhere, any time.

Altinn is built on a .NET platform, but there is no demand in most cases for the users to change their hardware or software. Regular access to the Internet is usually sufficient.

The solution builds on a standard interface based on an open standard (XML, SOAP), and integration towards the IT systems for the enterprises is implemented through the help of web services.

Altinn is designed for any security level and the software ensures that access to and treatment of data is restricted to people and software with proper access rights. Security mechanisms are incorporated for secure storage and tracking of data.

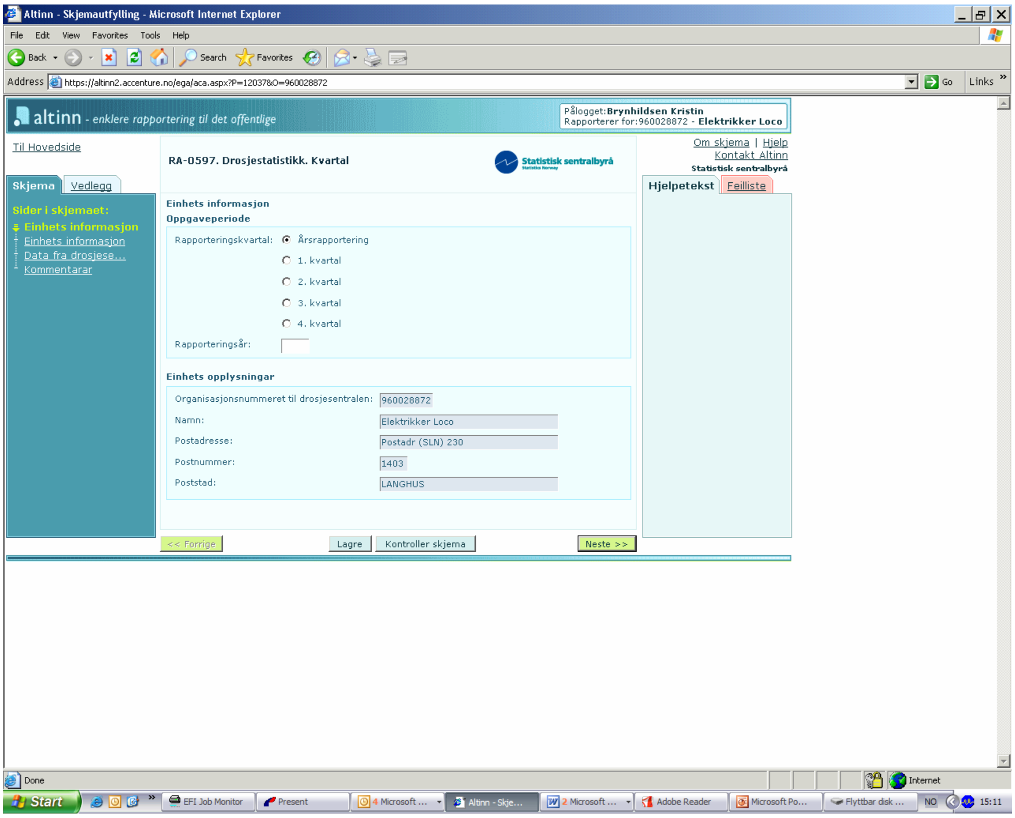
### Further development

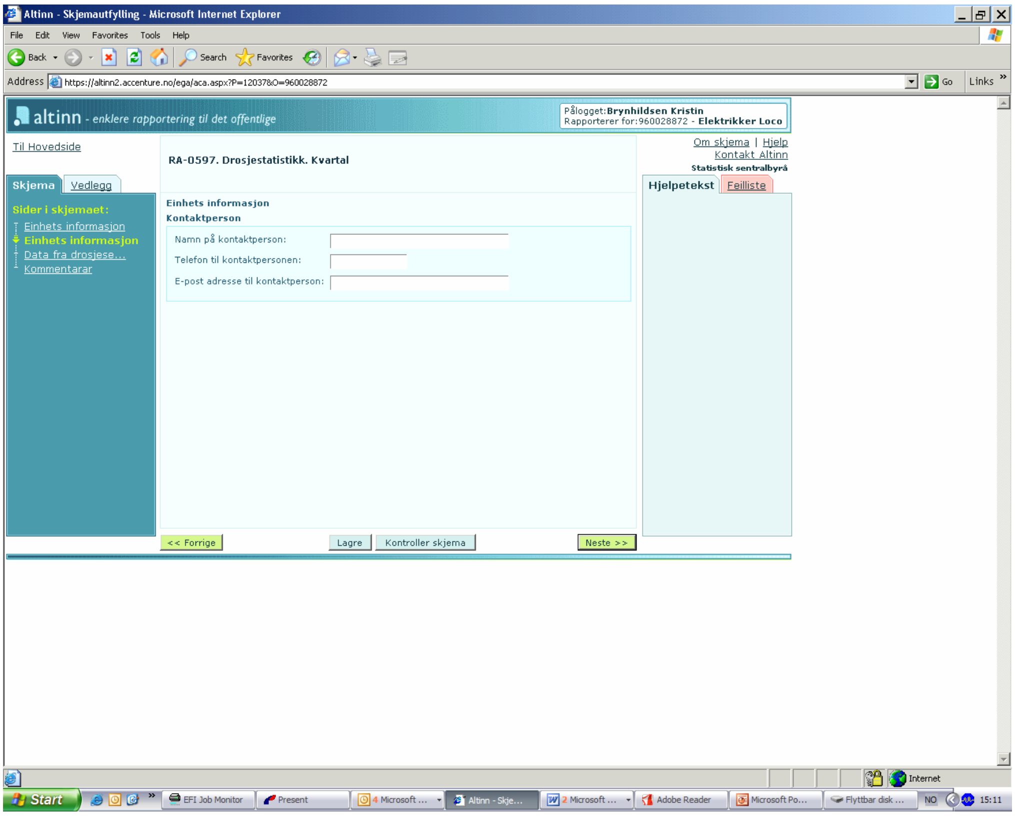
In the immediate future several new forms from other government agencies will also be available through Altinn. The aim is to provide access to most public forms through the portal.

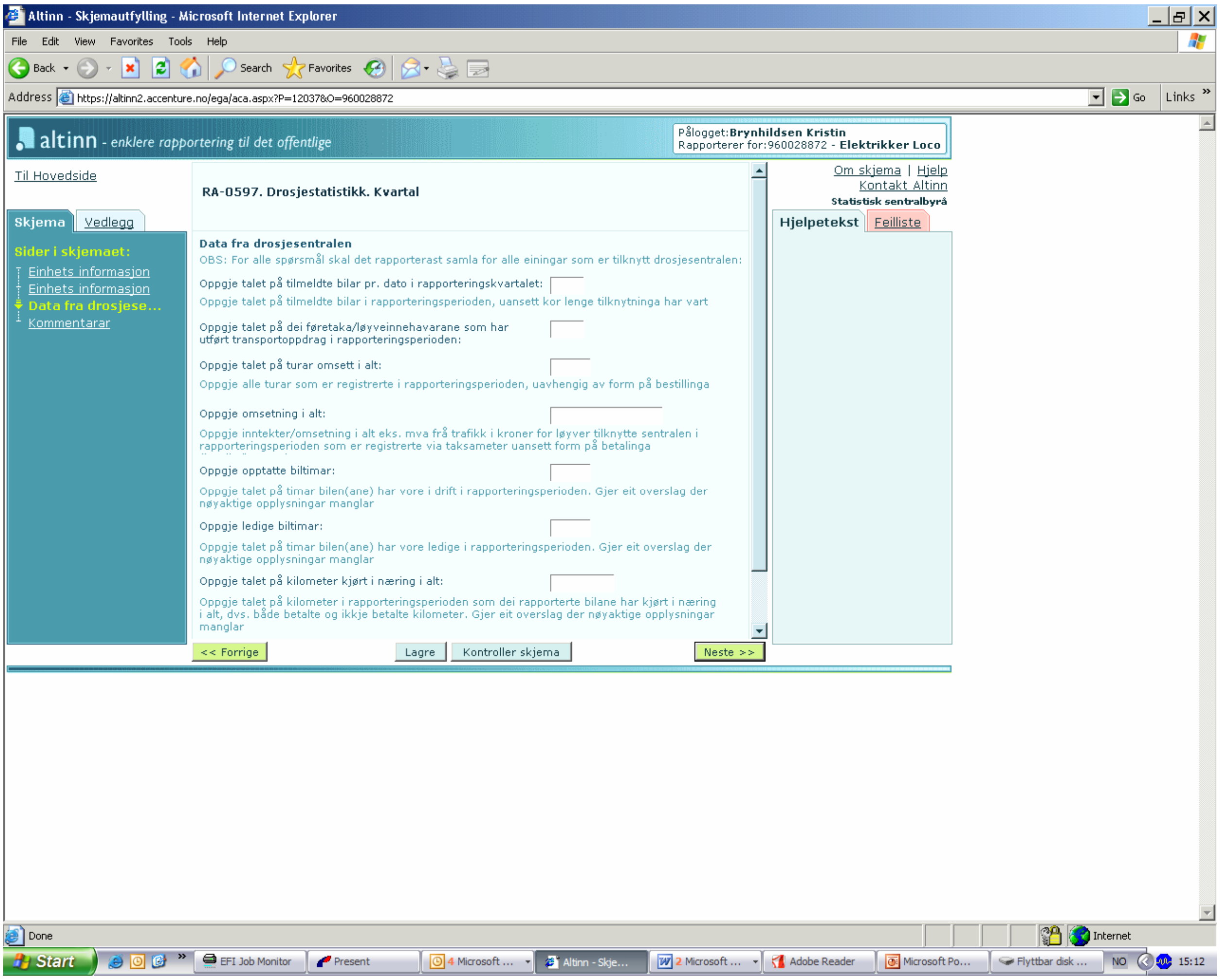
However, Norwegian enterprises are not the sole users of Altinn. Several forms designed for private persons are also available through Altinn.

The portal will be continuously developed in order to improve user interface (based on user feedback) and to enhance functionality. The responsibility to administer and develop Altinn is allocated to the Brønnøysund Register Centre. The Brønnøysund Register Centre is an administrative agency responsible for a number of national control and registration schemes for business and industry. The Brønnøysund Register Centre performs an important task by coordinating the reporting obligations of business and industry. The aim is to prevent superfluous collection and registration of information.

Appendix 2. **Copy of the electronic reporting form “RA-0597 “Taxi statistics” in the Altinn portal**






## Appendix 3. **The register of reporting obligations**

*The Register of Reporting Obligations'* main task is to keep running records of the business society's reporting obligations towards official authorities, and to identify coordination and simplification possibilities. The purpose is to avoid unnecessary collection and registration of information, particularly considering the situation for small and medium sized business. This register gives an overview of all the different information demanded and collected from the businesses by the many different registers and authorities in Norway. Every single information is kept by the receiving register or authority as before, while the Register of Reporting Obligations only keeps track of who has *what kinds of* information. The overview is recorded in a metadata base.

The Register of Reporting Obligations' shall compare questionnaires from different authorities. If two or more ask for the same information to the same type of businesses, these authorities shall cooperate to avoid double requests and registration. The Reporting Obligations Act *demands a coordination duty* from the authorities. In addition, the register keeps track of which permits you need to run a business within different sectors, and how to acquire these permits.

Today, the Register of Reporting Obligations is limited to cover obligations towards central government authorities. Later, the plan is to extend it also to cover regional and local authorities as well.

Due to the protection of privacy regulations, exchange of information between different authorities is restricted. Having access to another unit's information is only allowed for units with the right to collect the same type of information directly from the business.

Many types of questions about reporting obligations can be answered from the Register:

- Which reporting obligations are valid for our business/company?
- Where can we turn to receive a particular scheme/questionnaire and fill-in instructions?
- Which authorities have the right to access our information after we have sent it?

## Appendix 4. **Extract from the taxi operation questionnaire XML – specification**


```
<p>RA-0597. Elektronisk rapportering fra Drosjesentraler</p>
            </xforms:caption>
            <xforms:hint brreg:lang="NOB">
                <p>Oppgi informasjon om rapporterende drosjesentral</p>
            </xforms:hint>
            <xforms:caption brreg:lang="NON">
                <p>RA-0597. Elektronisk rapportering fra
Drosjesentraler</p>
            </xforms:caption>
            <xforms:hint brreg:lang="NON">
                <p>Oppgje informasjon om rapporterande drosjesentral</p>
            </xforms:hint>
            <xforms:group ref="/Skjema/EnhetsInformasjon-grp-5839">
                <brreg:sensitivitet type="Ikke sensitiv"/>
                <xforms:caption brreg:lang="NOB">
                    <p>Enhets informasjon</p>
                </xforms:caption>
                <xforms:caption brreg:lang="NON">
                    <p>Einhets informasjon</p>
                </xforms:caption>
                <xforms:group ref="/Skjema/EnhetsInformasjon-grp-
5839/EnhetsOpplysninger-grp-5840">
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                    <xforms:caption brreg:lang="NON">
                        <p>Einhets opplysningar</p>
                    </xforms:caption>
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5839/EnhetsOpplysninger-grp-5840/EnhetOrganisasjonsnummer-datadef-18">
                        <brreg:preutfyll/>
                        <brreg:sensitivitet type="Ikke sensitiv"/>
                        <brreg:kontroll type="Modulus 11 kontroll med
vektene 3, 2, 7, 6, 5, 4, 3, 2"/>
```


A complete specification can be downloaded from:
http://w2.brreg.no/oppgaveregisteret/spesifikasjon_skjema.jsp?skjemanr=1220.