



TWO HUNDRED YEARS OF HISTORY

Annual Report 2011 – The National Land Survey of Finland

DIRECTOR GENERAL'S REVIEW



In 2011, some decisions that will have a significant impact on the future of the National Land Survey of Finland were made. I, myself, feel that the most important thing affecting us is the policy to keep district survey offices from being integrated into regional authorities. This policy was the work of Tapani Tölli, who was the Minister for Public Administration and Local Government during the previous Finnish Government, and represents one of the last contributions of his tenure there. When the National Land Survey remains an independent entity, it provides the best foundation to develop operations for both our clients and our personnel. The National Land Survey of Finland can kick off its bicentenary celebrations with confidence.

Another equally important decision was appointing an administrator to submit proposals concerning the development of the National Land Survey administrative and operative structure. As I write this, we have already received information on the content of the proposal submitted by administrator Arvo Kokkonen, Deputy Director General of the National Land Survey. This means a transition to a single-tier organisation, whose area of operation is the entire country. Implementation of this proposal will enhance operational efficiency and achieve significant savings in administrative costs. This is why it has been included in the Finnish Government's Budget Framework for 2013-2016. With this decision, the proposal to integrate district survey offices into regional authorities has finally been laid to rest. The Ministry of Agriculture and Forestry will soon begin further preparations on the administrator's proposal to ensure that the new organisation will be up and running by the beginning of 2014.

A third major development was the decision to open a Topographic Database for the free use of all interested parties beginning on 1 May 2012. We hope that National Land Survey data is used as the basis for all GIS and ecosystems. This would improve the interoperability of data and systems and enhance the efficiency of administrative and business operations. In addition, we believe that opening databases will foster the development of new, innovative enterprises.

2011 was a good year operatively and financially. Nearly all operational units earned bonuses. The National Land Survey is now better equipped to handle difficult economic situations, than it was during the previous recession. Major development projects, reforms in registration processing and electronic property transactions also proceeded according to plan. The new payroll system was developed in co-operation with personnel organisations. It would be ideal if a mutual understanding could be found also in this matter, so that the money allocated for system development could also be put to good use.

The National Land Survey is once again facing major change. A particular challenge in addressing this change is the large number of management and development personnel retiring. A large amount of tacit knowledge will be lost unless special attention is given to preserving it.

This marks my last review as Director General. A great deal has happened over the past 20 years. The excellent reputation that the National Land Survey enjoys is not due to its Director General, but rather the performance and hard work of its personnel. I would like to thank the entire staff for all these years. I am left with a wealth of good memories. One of the strengths of the National Land Survey is the unity between management and employees in setting a course for development. This is also the strongest guarantee that the National Land Survey will remain independent. In these years of administrative upheaval, even the most minor internal conflict could be used as justification for dismantling the National Land Survey, which would undoubtedly be referred to as "redeveloping" it.

I would also like to thank all our stakeholders, particularly our own Ministry of Agriculture and Forestry. The Ministry and National Land Survey have always shared a common vision on the role and mission of the Survey, thus making it easy to make plans for the future. For 200 years, the National Land Survey has maintained the pillars of society. It obligates both us and future generations.

I wish my successor all the luck and success in this very demanding assignment.

A handwritten signature in dark ink, appearing to read 'Jarmo Ratia'. Below the signature, the name 'Jarmo Ratia' is printed in a simple, sans-serif font.

Jarmo Ratia

A queen in the 17th century once exhorted: "The surveyor arrives just as the land is bare and sets about his task." Leaders and heads of state have come and gone over the centuries, but land surveying in Finland has remained unchanged. Well, perhaps not entirely so. Under Russian rule, the Head Survey Office in the Grand Duchy of Finland was established on 14 November 1812. This year, we are celebrating 200 years of our administration through our work and the development of our operations.

Here at the National Land Survey, work is performed in processes and development in projects.

National Land Survey operations are divided into seven core processes and three support processes. In this annual report, the stakeholders of these processes will be presented.

The processes of basic land surveys, valuations and reallotments deal with property related matters, as do the processes of land consolidation and of maintaining legal registers. The process of topographic data produces all the data needed for cartography. From a citizen's point of view, the process runs the gamut from legal confirmation

of a title to parcelling, making entries to the register and plotting on a map. Personnel, financial and data administration processes support operations. Of the support processes in use, we will be discussing the data administration process.

A great deal has changed over the past 200 years. The number of personnel has grown from a few dozen in the early years to nearly 2,500. Today, we have 1,888 highly skilled professionals on our team. The number of locations we maintain has grown along with the number of employees. In the 1990s, we had over 50 locations, while today we maintain district offices in 35 different places. In addition to these, we have six national operational and service units as well as a Central Administration. For statistical information on finances, volume and duration, please visit maanmittauslaitos.fi/tilastot.

The National Land Survey of Finland has an excellent reputation and has received numerous awards. The most recent of these was given in 2012 by the State Treasury for best central government workplace.



"Read on!" says Head of Communications **Pirkko Yliselä**.

MULTITASKING SURVEYOR

Although technological advances enhance a surveyor's work, they are no substitute for field work and working with customers.



Since 2011, all NLS surveyors have had the opportunity to use laptop computers in their work, if necessary. Surveyors can also access the production system from home or the survey site using a laptop and network connection. This is expected to not only reduce the number of kilometres driven, but also shorten survey completion times. Customer service will be improved when the answers to many questions can be found in the information system right on site.

The long-term vision is that surveyors will no longer need to do any archive research at all; instead, they will be able to find all the data on a survey site from the cadastre.

During the year under review, the electronic transaction model was also applied in the production and distribution of survey documents. For example, invitations to survey meetings are no longer printed and put in envelopes at land survey offices, but are rather sent electronically to Itella for posting. The next step is to get involved parties to learn about their own property survey materials online.

The development of information technologies will continue with the adoption of the new registration system and electronic property transactions in 2013.

Tight six-month target

The long-term goal for parcelling surveys is to reduce the time needed for parcelling and decrease regional differences. The six-month duration has proven to be a challenge. In 2011, 4 of the 12 district survey offices managed to achieve this: Lapland, Northern Ostrobothnia, Central Finland and Southeastern Finland. The average parcelling survey took 6.9 months to complete, i.e. a few days less than in 2010.

Regional differences in service times have been

reduced. Process development and standardising quality are continuous activities.

Surveyors have long worked independently, as most were still working on a commission basis even as recently as the early 1970s, while receiving a small monthly salary from the state. Today, surveying is a standardised product throughout Finland, leaving a standardised cadastre for future generations.

One-person surveying

A majority of parcels can be handled in a single meeting, with the surveyor being able to complete the necessary documentation that same day. Surveyors have become multitaskers, who take care of basic parcelling archive research, send out invitations, do topographical surveying, conduct survey meetings, produce documents and make changes to the cadastre.

A key customer audit conducted in 2011 revealed that there was a desire for improvement, particularly in the flow of information and meeting practices.

"In the near future, we will be giving special attention to comprehensive, customer-oriented quality models. We plan on enlisting the services of an outside inspector for our quality inspections beginning in 2014," explains **Ari Tella**, Chief Engineer in charge of Basic Land Surveys.

Legislation has thus far precisely regulated what type of training a surveyor requires for each surveying assignment. An effort to make qualification requirements more flexible is currently underway, as expertise can be acquired after completing one's comprehensive education in a variety of ways.

"Despite advances in technology, meeting customers and field work remain unchanged. Satellite positioning makes surveying work easier and reduces, for example, the unnecessary felling of trees. It is, however, hard to imagine how this kind of work could be done other than by putting your boots on and getting out into the field, much as it has been done since the 1600s. Surveying almost always interests the involved parties," states Ari Tella.

OPENNESS EMPHASISED IN VALUATION

Valuation surveys enhance co-operation both in-house and with stakeholders.

Public road surveys have been a routine part of valuation surveys for the past ten years. A massive project completed in 2012 encompassed tens of thousands of road kilometres and affected hundreds of thousands of properties. In these public road surveys, the edge of the road area is marked and compensation is paid to landowners for the widening of roads over decades or even centuries. Precise ownership and position data also improve the quality of the cadastre.

“Road delimitation surveys have really taken a lot of manpower, and there is a learning path already established for surveyors doing delimitation surveys that leads to new assignments,” says Chief Engineer **Jani Hokkanen**, who is in charge of the valuation process.

“We’ve enjoyed great success with achieving our valuation survey goals in 2011. We also earned some high marks in our employee satisfaction survey, so I got off to a very nice start in a pleasant atmosphere,” says Jani Hokkanen, who transferred to his new position from the Development Centre in 2012.

Valuation surveys are conducted in all 12 Finnish district survey offices, each of which has its own valuation team. In 2011, national special advisers and specialist survey engineers, who are available regardless of their area of expertise, were also appointed. This was instituted to, among other things, even out regional differences.

Underground properties?

Valuation surveys are usually an expropriation, in which compensation is specified for the landowner in return for land needed for such things as roads, rail lines or nature conservation areas. The single most important service is a public road survey: more than 600 of these have been done each year over the past few years, in addition to delimitation surveys. Major artery projects regulate demand.

Recent years have been marked by strong growth in partitioning surveys. In 2011, the demand for partitioning

increased by nearly 20%.

Over the years, advances in information and surveying technology and the official purchase price register have made surveying easier. Correspondingly, the new challenges being faced include changes in land use and an acceleration in the rate of price changes. Along with decades of surveys being conducted, there has also been greater variety in valuation assignments, such as underground construction.

For example, underground parking facilities cannot be privately owned, but rather must usually be managed under a leasing or joint tenancy agreement. 3D property formation is currently being investigated.

In the near future, key areas of development will be evening out regional differences and reducing the order backlog, in order to reduce the average waiting period. This will be done by lowering the threshold of both processes and geographical districts.

Guidelines for all to see

In valuation surveys, as in NLS operations generally, the basis for all operations is reliability and impartiality. Openness is emphasised by posting even more survey and valuation information on the NLS website.

Major survey projects have also been given their own pages, where involved parties can follow the progress of the survey and download maps and other survey-related data. A key customer audit conducted in 2011 showed that there was a desire for electronic transactions.

“Working in closer co-operation with customers and other stakeholders is how things are done today, and it is increasingly expected of us,” says Jani Hokkanen.



LAND REARRANGEMENTS REVEAL THE CHANGES IN SOCIETY

The nature of rearrangements has changed, from royal decree to co-operation with landowners.



The goal of rearrangements has remained the same since 1757, when the Swedish Crown issued a decree for land reform. An effort was made to consolidate fragmented agricultural and forest tracts, making them more uniform and effectively managed.

The last major basic land consolidation was completed in Kuusamo in 1953, and the parcelling of common water areas was finished in 2004.

"In the 1990s, some considered doing away with land rearrangements entirely, as they often resulted in strong opposition from landowners, despite good intentions," explains Chief Engineer **Kalle Konttinen**, Head of Land Consolidations at the NLS.

Changing operating practices

Fortunately, they were not eliminated, as the need for and interest in land rearrangements has further increased. In the 1990s, an increase in the size of farms brought about by the EU created an even greater need for land consolidation, as arable land was often purchased remotely. This meant a decrease in the size of field blocks, not an increase, as originally intended. Reallotment of parcels was needed to establish protected areas.

At the same time, the NLS began developing land consolidation methods. Instead of extensive projects involving entire villages, the focus would now be placed on key problems and the wishes of landowners. This resulted in, for example, a shortening of the time needed for the consolidation of field areas to five years, as opposed to the 10 years needed at the end of the 1990s. Landowner attitudes have improved along with this development.

The change required new technical approaches as well as new attitudes. "Before, it could take as long as a year just to make an allotment plan, so it's understandable

that a surveyor wouldn't be so keen to make any changes. With today's computer systems and laptops, it's much easier to show the landowners a variety of alternatives, even just sitting around the kitchen table," explains Konttinen.

In the future, there will be an effort to make right-of-way expropriations more like reallotment, so that land exchanges could be used in place of expropriations.

Land rearrangements can also improve traffic safety. For example, a land consolidation completed in South Ostrobothnia in 2011 reduces the amount of tractor driving on Highway 18 by over 20,000 kilometres a year. This also reduces farming costs.

Joint forest ownership a big hit

The current star attraction in land rearrangements is joint forest ownership. Forest ownership is fragmented through inheritance partitioning, with increasingly urbanised heirs neither knowing how nor wanting to manage their forest tracts, which can be hundreds of kilometres away.

In the joint forest ownership scheme, forest owner holdings are formed into a unit similar to a housing corporation for the purpose of managing the owners' forests. Each owner receives a dividend from revenues earned by the forest holding. 43 jointly-owned forests, with a combined surface area of 17,700 hectares, were established in 2011.

"The first jointly-owned forests were established in Finland in 1892. Growth in the number of forest owners living in cities, as well as reform of the Act on Jointly Owned Forests at the beginning of the 2000s, were behind this reawakened interest," explains Konttinen. Increasing the number of jointly-owned forests is also a goal of the National Forest Programme 2015.

Opportunities for the use of reallotment of parcels in Baltic conservation have also been investigated by the NLS as a new area of application. Could agricultural nations putting the most strain on the health of the Baltic Sea adopt reallotment in order to reduce phosphorus emissions? These kinds of needs could not have been anticipated in the Great Land Reform of 1757.

A BRIEF HISTORY OF REGISTRATION

Strictly speaking, the history of publically credible registration only dates back to 1997.

When a property changes owners, the new owner must apply for the title. Change of ownership no longer requires making a declaration aloud at three consecutive magistrates, but rather by simply registering the property transfer in the title and mortgage register.

"Even though the old term is still used, the procedure has changed considerably. An essential difference is the fact that the authenticity of the right of ownership requires an extensive investigation before the change can be entered into the register," explains Chief Registrar *Henrik Ungern*.

Although the tradition of registering the right of ownership in Finland dates back to the 1600s, the first national regulations concerning registration were contained in the 1734 Land Code. Despite regulation, the registration system at the beginning of the 1800s was still undeveloped, as there was no cadastre and the registration of ownership was not comprehensive. A step toward establishing a publically credible register was taken in 1805, with a royal proclamation concerning the transfer of property, which was applied long into the 1900s. It was then that the authenticity of acquisitions began to be investigated.

The Act on Title Registration, which entered into effect at the beginning of 1932, laid the foundation for the title and mortgage register. This later made it possible to investigate changes in ownership much more easily than using legal records.

The actual land register would not gain public credibility until the 1997 Land Code, even though the Title and Mortgage Register already enjoyed a very high level of credibility before this.

Public credibility means that the registration authority is responsible for the accuracy of the register data. This is why acquisitions are thoroughly examined before registration. Long gone are the days when anyone could simply declare that they were the new owner of an area.

Standardisation of operations

The link between title registration and local courts has a long history almost everywhere in Europe. Advances in information technology allowed for a natural transfer of registration in connection with real estate formation.

The Title and Mortgage Register was integrated into

the national Land Information System in the Act on the Land Information System and Related Information Service, which entered into force in 2003. The Act made the National Land Survey the administrative authority for the entire Land Information System, overseeing its maintenance and development.

The transfer of registration matters to the NLS in 2010 was a natural extension, which also involved assuming responsibility for the maintenance of the Title and Mortgage Register.

This was the right solution. Customers only have to deal with a single authority and registrars can take advantage of surveyors' expertise in, for example, interpreting unclear archive markings.

"An essential improvement has been the standardisation of operations," explains Henrik Ungern, who is in charge of the registration process. Processes have been refined and the transition from over 50 separate district courts to the 35 district offices of the NLS has contributed to the standardisation of registration functions.

There are still regional differences, and only a few district offices have achieved the targets set for the processing duration. The goal for the near future is to bring the average duration of title registration processing in Finland to well below 30 days.

Real-time data

When registration matters were transferred to the NLS, a comprehensive reform of the Title and Mortgage Register system was begun. It has gone according to plan, with trial runs being carried out in 2011. The new system shows changes being made to registration in real time, thus improving the accuracy of data.

The new system will be launched on 4 March 2013, with the electronic property transactions function that is based on it being launched in September of that same year. Electronic property transactions are expected to facilitate the work of banks and other major actors, even beyond Finland's borders.



CUSTOMER SERVICE IS THE FRONT DOOR OF AN ORGANISATION

When routines are moved online,
customer service becomes real advisory work.



Nearly 200,000 members of the public visit NLS customer service points every year. An even larger number of customers handle their business by phone. Advice is usually sought for title registration and parcelling matters. Summer is the high season. This is when right-of-way issues or shares in jointly-owned land and water areas are investigated.

When registration matters were moved from district courts to the National Land Survey in 2010, the number of phone calls received and the sale of extracts and certificates doubled. Providing advice on title and mortgage matters has become one of the most important customer service tasks.

“Buying a house or summer cottage is one of life’s biggest events. When dealing with things like this, expert assistance is absolutely crucial. A customer service representative must know how to explain even the most complicated matters in such a way that even people dealing with properties for the first time will understand them,” explains Chief Engineer Asta Varonen, who is in charge of customer service and the information services process.

In the 1800s, customers were served in provincial survey offices every day from 10 am to 1 pm. Today, all NLS district survey offices have customer service, which provides assistance in everything from buying maps to ordering digital materials.

Customers satisfied with the service

“**I**n addition to the registration matters, opening data online has introduced entirely new users to NLS services. The upcoming ability to, for example, check one’s own property information online will further increase the

demands placed on customer service. The work done by customer service personnel is therefore becoming more and more advisory in nature,” explains *Asta Varonen*.

According to a survey conducted in the autumn of 2011, customer satisfaction with NLS services has remained quite high. More than 80% of the respondents were fully or very satisfied with the customer service they received. Of NLS web services, MapSite garnered a great deal of praise, whereas users of Professional MapSite were more critical.

Data is intended for use

The NLS wants the data it produces to be widely used in society. At the beginning of 2011, place name products and general map products at 1:1,000,000 and 1:4,500,000 in vector and raster formats were made available free of charge. A decree amendment was made at the end of the year, which opened topographic data sets to the free and open use of all citizens and businesses in May 2012.

This free use of data is intended to generate new products and services through company innovation. The NLS only offers custom-tailored data products for official use.

NLS’ new information data service strategy emphasises that data products and services must meet customer needs.

Drafted in 2011, the data service strategy comprehends the period 2012–2016. During this time, products will be developed so that data services for authorities and other professional customers will be provided electronically by 2016. Data sets are offered via real-time interfaces or as file downloads. The goal is to get as many members of the public to do their transactions online as possible.

When routine transactions are moved online as self-service features, personalised service can be offered to those who most need it. “The ability to conduct business online varies from person to person, and not everyone is even familiar with, for example, co-ordinates,” explains Asta Varonen.

TOPOGRAPHIC DATA FOR A MULTITUDE OF USES

NLS celebrates completion of fundamental improvements to the accuracy of the cadastral index map. The Topographic Database is now in outstanding shape.

“**T**opographic data is used now more than ever,” states Chief Engineer *Jurkka Tuokko*, who is responsible for the topographic data production process at the NLS.

“Not everyone is aware that they are actually using it. It was difficult to predict how widely topographic data would be used in, for example, route finding and real estate, even when the demand for printed maps began to wane at the beginning of the 2000s.”

The decline in graphic map sales continued in 2011. Correspondingly, the number of searches made using Map-Site increased by approximately 20% over the previous year. Approximately 107 million map searches and some 18 million orthophoto searches were made.

Despite new advances in consumer applications, the government is the largest user of topographic data. For a long time, maps were primarily intended for use by the military, with land use planning coming later. The largest customer in the business sector is the forest industry.

Cadastral index maps made precise

The topographic data strategy has not changed a great deal in the history of cartography. The goal has always been the comprehensiveness, currency and precision of data. The most significant strategic change occurred in the national coverage of data. Today's topographic database offers consistent data for every corner of Finland.

“The biggest change has been in the use of data. Our clientele has expanded and topographic data is used for a wide variety of purposes, using a wide variety of technologies. Naturally, in order for this to happen, there had to be a considerable improvement in the coverage and precision of the data,” stresses *Jurkka Tuokko*.

In 2011, an extensive improvement of the cadastral index map was completed, which resulted in a boundary marker accuracy of as much as 50 centimetres. The positional accuracy of the old cadastral index map was as much as 10–20 metres. This improvement took more than 30 years, encompassing over 13 million boundary markers, i.e. the register entries and survey maps of each and every property in Finland.

The improvement work was based largely on aerial photography and co-operation between the NLS, other authorities and citizens. Landowners marked the location of their boundary markers with white plastic signals, which

were visible in aerial photographs. In sparsely populated areas, the precise position of boundary markers was measured on site.

Upon completion of the improvement, the task of bringing the cadastral index map up to date within the NLS moved from topographic data production to the process of maintaining legal registers.

The next major improvement is to increase the accuracy of the digital elevation model (DEM) from a 10 metre grid to a 2 metre grid. This will be completed for all of Finland by 2020.

Developing co-operation

Tuokko explains that the biggest technical advance in the history of cartography is aerial photography, which was widely adopted in the 1930s. Since then, the biggest stride made has been GPS, which has improved surveying accuracy and made the surveyor's work in the field easier.

Advances in information technology and requirements for improving work efficiency have also brought about fundamental changes that even affect strategy. Both the Ministry of Agriculture and Forestry's “Strategy for general cartographic tasks” and the recent Act on Information Management Governance in Public Administration emphasise that redundant work and redundant databases must be eliminated.

“In co-operative efforts with both public administration and municipalities, we also have a lot of room for improvement,” admits *Tuokko*. During the year under review, excellent co-operative progress was made in, for example, improving the Agency for Rural Affairs field parcel register. In addition to municipalities, other close partners include the Finnish Transport Agency, Finnish Forestry Centre and Finavia.

Our vision is to have the joint topographic data system form the basis for managing position data for the entire public sector by the end of this decade. In order to do so, the status of the topographic data system as one of the main national registers must be made official.



PROPERTY DATA CENTRALISED AND DIGITISED

The first hundred years of the cadastre passed without any major changes. Then, things began to happen.



A land book on households subject to taxation has been kept in Finland since the 1500s. The keeping of a proper land register was begun in 1895. The next significant step came nearly one hundred years later, when all Finnish real estate information was entered into an electronic register in 1994. The land register records, drafted on the finest Tervakoski watermark paper, had been transformed into bytes, which could

be accessed from any office.

Property data maintained by municipalities and the NLS has been kept in a single, common register since 2005. Since then, some municipalities have transferred responsibility for maintaining the cadastre of their zoning areas and legal surveys to the NLS.

An important goal was achieved in 2011, when the position accuracy of boundary marks on the cadastral index map was brought up to current standards.

Text and images

The current cadastre includes both a text section and a cadastral index map. Thanks to the joint database, the map and actual property identifiers are always up-to-date, regardless of whether the area in question is administered by the NLS or by the municipality.

The cadastral index map covered the entire country in the 1980s, with the last cadastral maps drafted on film being digitised in 2004.

Information technology has improved the accuracy and accessibility of data and also promoted new product and service innovation.

The latest addition to the Land Information System administered by the NLS is the Title and Mortgage Register, whose maintenance was transferred from district courts to the NLS in 2010, along with property registration matters.

Information technology revolutionises registration

Approximately 80,000 property transfers are made each year, and notaries have been submitting price data to

district survey offices since 1980. This data is used to maintain the official purchase price register, which the NLS needs above all else to determine the value of properties. Other key users of the register include the Tax Administration, Population Register Centre (PRC), banks and real estate agents.

For the past couple years, notaries have been submitting property transfer notifications electronically to the NLS, which also sends the data to the municipality in question. A major reform is slated for the autumn of 2013, when buyers and sellers can engage in property transactions electronically, without requiring a notary.

Basic improvements continue

In 2011, improvements were made, in particular, to data on rights-of-way and other easements and shareholder registers were drafted for joint holdings. All shareholder registers for joint holdings will be drafted and confirmed in 2015.

"We still have a lot of basic improvements to make before the rights-of-way between property holdings can be determined and registered. Legislation and practices have varied from decade to decade to the extent that the rights often have to be determined using old survey documents. In many cases, a legal resolution requires that the matter be settled by means of a land survey, in which all involved parties are included," explains Chief Engineer **Tuomas Lukkarinen**, who is in charge of the process of maintaining legal registers.

In the future, private roads and easements will be listed in the register as "right-of-use units", thus showing their position on the cadastral index map. New tasks are entering the fray along with maintenance and basic improvements.

"Social change can always be seen in NLS operations. After the Second World War, the resettlement of Karelian refugees created new kinds of work for us. The social change we're dealing with right now involves the consolidation of municipalities, which will definitely keep us very busy for the next few years," says Tuomas Lukkarinen.

WORK GOES WITH THE WORKER

Information systems reduce the number of kilometres driven and redundant tasks.

Being able to draft parcelling documents out in the field has been a surveying dream for as long as laptop computers have been on the market. However, the massive size of data sets to be moved and stringent data security requirements have long put the brakes on realising this dream.

Mobile work was established throughout the National Land Survey in 2011 after a two-year trial. With mobile work, the surveyor's vehicle contains not only his or her surveying instruments, but also a laptop computer and a network connection to NLS applications. The solution shortens survey completion times and rationalises the surveyor's day, because there is no need to drive to the office to access a register or do paperwork. Service is improved when answers to the customer's questions can be provided straight away.

"There's also a strong environmental consideration here, as the drive to the office is usually tens of kilometres. We're also working to use teleconferencing. We considerably added to our technical teleconferencing capabilities last year, and it's been put to good use," explains a satisfied **Matti Lisitsin**, Director of IT.

Other key projects in 2011 were the development of the spatial data infrastructure, the development of the registration system and electronic property transaction system currently underway, as well as a comprehensive restructuring of the intranet.

Tighter control of information management

In 2011, the Act on Information Management Governance in Public Administration entered into force and the NLS information management strategy was updated. The Government Decree on Information Security entered into force the year before.

Entering into force in September, the Act on Information Management Governance in Public Administration emphasises the compatibility of state and municipal information systems. This requires a uniform comprehensive architecture and joint services. Furthermore, systems should comply with Public Administration Recommendations (JHS). In practice, the law means closer and more comprehensive stakeholder co-operation in system design as well as increased and more predetermined documentation.

A significant development is the adoption of databases that transcend organisational boundaries. In addition to the Land Information System, the topographic database is considered a basic data reserve, which other authorities can use in place of their own, redundant registers.

The information security decree also aims to enhance the level of co-operation between authorities. When NLS information systems have been audited in accordance with the information security decree, a person logged into the NLS system will also be considered a trusted user for other audited state institution systems.

"We still have not entirely eliminated conflicts in data protection and information openness," Lisitsin points out.

In particular, personal and ownership data found in the Land Information System is always thoroughly protected at NLS. All changes made to the Land Information System and the persons making them can be traced. Not even information written in ink on watermark paper could be changed unnoticed.

More and more bytes

Information technology is a newcomer to the centuries-long history of surveying. It was not implemented in earnest until the 1990s.

"Just over twenty years later, it's hard to imagine how we ever managed without information technology," says Lisitsin. Even the JAKO Land Administration System, which was developed at the turn of the millennium, will soon be updated.

Lisitsin believes that major changes in the near future will involve an increase in video and data traffic as well as doing away with reliance on terminal devices. Even those that have used massive production systems will soon be working with very different devices in very different places.





NATIONAL LAND SURVEY OF FINLAND



Down to Earth.