Basic Registers for Geo-Information

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SUMMARY

In the public administration area in the Netherlands, the idea has developed to create basic registers. Under this concept, basic registers are registers of personal data, data concerning immovable or movable property and similar data, which are essential for the public sector to function properly. In the Dutch government's plans, data, which is part of a basic register, will be collected just once from individuals or businesses. The most appropriate public agency for the type of data in question will be responsible for its administration. Furthermore, use of this data will be mandatory throughout the entire government sector.

After a start-up period of more than 10 years, the plans now seem to be getting somewhere. The Dutch government has announced the development of nine basic registers for the time being, which will pertain partly to persons, partly to immovable property, partly to vehicles and partly to financial matters.

The planned basic registers relate to: 1. Natural Persons, 2. Legal Persons, 3. Buildings, 4. Addresses, 5. Basis Register Cadastre, 6. Maps (Topografisch Basisbestand 1:10,000 [Topographical Base Map (TBM)]), 7. Registration Numbers (for vehicles), 8. Wage, Employment and Benefit Relationships and 9. Income and Assets.

Basic registers must meet certain criteria:
Registration is regulated by law. The clients have a report obligation and all tiers of government have an utilisation obligation. There must be clear lines of accountability. The costs of realisation and operation must be within reason and unambiguously allocated. There must be transparency about the scope and content of the registers and firm agreements and procedures between the registrar and the clients. The procedures for accessing the basic registers must be unequivocal and there must be a strict regime of quality control. Fixed procedures must be defined for the obligatory involvement of clients in the decision-making. The position of the basic registers within the overall registration system and the connections with the basic registers must be clearly defined. Authority over the authentic registration must lie with a government agency and one minister will be responsible for realisation and operation.

These criteria coupled with solid monitoring should deliver a system of basic registers.
The basic registers for persons, land parcels and (partly) topography will evolve in the coming

years through amendments to various laws. New legislation will be drafted for non-natural persons, buildings and addresses. A political debate is still underway on the inclusion of the LSBM as a basic register.

The basic register system is developing slowly but surely. Around 2010 a system should be in place and the basic registers should be implemented.
The greatest risk is that too many basic registers will develop with insufficient internal cohesion. In other words, a collection instead of a system.

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1. INTRODUCTION

In the public administration area in the Netherlands, the idea has developed to create basic registers. Under this concept, basic registers are registers of personal data, data concerning immovable or movable property and similar data, which are essential for the public sector to function properly. In the Dutch government's plans, data, which is part of a basic register, will be collected just once from individuals or businesses. The most appropriate public agency for the type of data in question will be responsible for its administration. Furthermore, use of this data will be mandatory throughout the entire government sector.
After a start-up period of more than 10 years, the plans now seem to be getting somewhere. The Dutch government has announced the development of nine basic registers for the time being, which will pertain partly to persons, partly to immovable property, partly to vehicles and partly to financial matters.
This article describes successively the central idea underlying the basic registers, the history, the current situation and the plans for implementation of the basic registers, the general requirements which basic registers must satisfy and the question whether a collection of basic registers should be involved, or, instead, a system. After that follow firstly a short observation about the planned basic registrations natural and legal persons and then more detailed sections about the planned basic registrations in the geo-information field, namely buildings, addresses, parcels and maps. There will be finished with conclusions.

2. THE CENTRAL IDEA UNDERLYING BASIC REGISTERS

The Netherlands covers 41.000 square kilometers, with a population of about 16 million. The Netherlands consists of 12 provinces and about 450 municipalities. The population density is 420 people per square kilometer. The Dutch GDP is roughly $283 billion. According to the IDC/World Times Information Society Index 2000 it is one of the most developed countries in the worldwide information society (seventh) (IDC 2001). Further, the Netherlands is ranked as number 5 on the Human development index of the UNDP (UNDP 2003, 245).

In the Netherlands, all governmental bodies combined administer an infinitely large number of registers to carry out their tasks. This has resulted in the same data often being requested several times from citizens and/or businesses, apparently the same data turning out to be just slightly different, and data often being stored at multiple locations and not being easily exchangeable with each other. Consequently, the administrative costs for citizens, businesses and the governmental sector itself are unnecessarily high.

The idea of a basic register has been developed to lower the administrative costs on the one hand and improve government services on the other. The Minister of the Interior of the Netherlands defines basic registration as:

"High-quality files, with explicit guarantees to maintain that quality, containing vital and/or multiple information required with regard to the body of legal tasks and for diverse reasons about persons, institutions matters and events, which is designated by the law as the only officially recognized registration of such information and which is used throughout the country by all government bodies and, if possible, private organizations, unless otherwise excluded by substantial reasons such as the protection of privacy"

Briefly stated, the concept boils down to this: designate certain data which is essential for large parts of the public sector to carry out their tasks as "officially certified data"; collect this just once from citizens and/or businesses, give one entity within the government responsibility
for administering the data (different government bodies may be responsible for particular types of data) and make use of this officially certified data mandatory within the entire government.
There are no such registration systems at present; the nearest thing is the municipal basic records and the cadastral records.

The basic idea is obvious. For example, make sure that there is an authenticated set of name-and-address data for everyone, authenticated parcel identification, authenticated and harmonized registration of legal persons and authenticated set of topographical basic data. Collect this data in a way, which ensures that members of the public and businesses only need to provide it once. This is then guaranteed by a government ban on any other efforts to collect the same information. If a government agency needs this information for its own processes, it must get it from the relevant institution, which, needless to say, would be under an obligation to provide it. This would reduce the administrative workload and improve the consistency and quality of government actions: an excellent idea for a government that takes its public services seriously.

At the moment, public administration is somewhat segmented; there are many (seemingly) autonomous public bodies. So, uniform definitions are often lacking, information exchange is not a matter of course, and there are scarcely any legal prohibitions or obligations in this area. A lot needs to happen to remedy all of this. This will partly involve IT issues, mostly legal questions relating to, for example, privacy and delivery conditions, as well as financial questions, such as fees, and organizational and institutional questions, such as who is responsible for what. It will take time to get all of this properly organized.

3. HISTORY, CURRENT SITUATIONS AND PLANS

More than 10 years ago in the first Kok government, the idea was already proposed by the then-State Secretary for the Interior Jacob Kohnstamm. He brought out a policy document entitled 'Back to the Future', which sketched out electronic public services and ideas, which

went beyond the front office and incorporated the back office and infrastructure as well. This policy document led to, amongst others, the so-called Public Counter 2000 (Overheidsloket 2000) project, an attempt to integrate electronic services at municipal level.

The idea remained on the political agenda under his successors, without much progress being made.

The next government continued along this line, under the auspices of Minister Roger Van Boxtel, who produced an action plan called 'Electronic Government', which addressed efficient electronic access to government, better public services and improved internal operations in central government. Concrete projects would be launched and deliver demonstrable results. At the end of this government, State Secretary Johan Remkes from Housing, Spatial Planning and Environment published a letter explicitly setting out the government's intentions regarding geoinformation.

In the first Balkenende government the same Mr Remkes, but now in his capacity as Minister of the Interior, submitted the policy document 'Better Government for Citizens and Businesses' (Beter Bestuur voor Burger en Bedrijf), which explicitly addressed this theme, as did his concluding letter on the Action Plan for Electronic Government.

Only under the current Dutch cabinet there seemed to have been real progress. The former Minister of Government Reform Thom De Graaf announced legislation in 2004 for six basic registers. His successor, Alexander Pechtold, has added three more in 2005. In addition, he has announced further research for several others.

The planned basic registers relate to: 1. Natural Persons, 2. Legal Persons, 3. Buildings, 4. Addresses, 5. Parcels of Land, 6. Maps (topografisch basisbestand 1:10,000 [Topographical Base Map (TBM)]), 7. Registration Numbers (for vehicles), 8. Wage, Employment and Benefit Relationships and 9. Income and Assets.

Further research will include investigating the desirability of a basic register for the Large Scale Base Map of the Netherlands and subsoil geo-data (DINO) [Data and Information on Subsoil in the Netherlands].
The bill regulating the basic registers for Parcels of Land and Maps (TBM 1:10,000) is now before the Council of State for advice. The bill is expected to be submitted to the Dutch Parliament in 2006. Work is being done on the bill regarding Natural Persons. The Cabinet's goal is to submit this bill to Parliament in 2006 as well. The bill regarding Legal Persons should be submitted this year, too. Progress is also being made with respect to Buildings and Addresses, but the bills concerning those registers are expected to be submitted somewhat later.

We will not examine the other registers any further, as they are less relevant or not relevant at all to the geo-information field.

4. GENERAL MANDATORY CRITERIA FOR BASIC REGISTERS

The government drew up mandatory criteria for basic registers as early as 2003. One may infer from the legislative proposal for regulating the basic register of land parcels and maps that these criteria still apply. The details are explained below.

4.1 Registration is Regulated by Law

The government intends to establish clearly and unequivocally the judicial implications of a basic register system. First, the aim must be clearly understood. The legislation must establish the scope of the register, the defining features of authentic data, and the rights and obligations of the individuals and agencies concerned, including the obligation to utilise the register (local government), the obligation to report suspected errors (clients), and the right to supply data only once. This means, amongst other things, that data from a basic register need no longer be checked for authenticity.

4.2 The Clients have a Report Obligation

A basic register is not by definition flawless, even though it ought to be, given its importance across the whole spectrum of government. This is why clients are subject to a report obligation. Hopefully, extensive use of the system will quickly expose inaccuracies and generate an automatic process of correction. To ensure that this mechanism operates effectively all clients that use the data in a basic register are legally obliged to report any doubts about accuracy to the registrar, who will carry out the appropriate checks and make any necessary adjustments.

4.3 All Public Institutions are Obliged to Use the Basic Register

To ensure that members of the public and businesses only have to supply data once, that the quality of the data is beyond reproach, and that the exchange of data between authorities is streamlined, the government wants to make use of the basic register system obligatory for all public institutions and all private institutions with a public remit. Hence, data may not be collected more than once; exceptions to this rule are allowed only for reasons of privacy. This will also help to ensure that the data used in work processes needs no further verification. Clients are obliged to contact the registrar if they doubt the accuracy of a piece of information.

4.4 Clear Accountability

The government is not exactly explicit on this point. All it says is that accountability must be clearly defined. In other words, there must be certainty about who is responsible for the basic register and whether they can be held accountable for errors and error-related damage.

4.5 The Realisation and Operating Costs must be Within Reason and Clearly Allocated

Another point upon which the government is not exactly explicit. It points out that the benefits of basic registers will not be gleaned by the agencies that foot the bill. "The designated minister must find a solution for the cost defrayal in dialogue with the registrar and the clients." General defrayal does not go without saying, nor is it entirely out of the question.

4.6 Transparency about the Content and Scope of the Registers

When a basic register system is introduced, the direct link between data collection and specific legal tasks often melts away. It is therefore essential for the content of a basic register to be absolutely transparent across the entire spectrum of the relevant organisations. According to the government, it is important to define the data in the basic registers and the domain (objects of registration) to which they relate.

4.7 Firm Agreements and Procedures between the Registrar and the Clients

The government sees this point as essential to efficient operation, but it also recognises the implicit difficulties. First, the roles of the different parties need to be explicitly defined in relation to the basic registers and to each other. Secondly, the mutual responsibilities need to be established, and thirdly, issues such as change management and exchange formats need to be settled.

4.8 Clear Procedures for Accessing the Basic Registers

Basic registers may hold publicly available data and classified data. In the case of publicly available data (most geo-information records will fall into this category) this point primarily concerns delivery conditions and suchlike. It is common knowledge that delivery conditions, depending on their purport, can widen or restrict accessibility. The price question will also have to be addressed in our opinion. At the moment this service could be supplied in any manner of ways, from free of charge to a commercial rate.

As far as the classified registrations are concerned the government places the emphasis on the authorisation procedure. Before access is granted to such information a definitive decision must be reached via a formal procedure, which weighs up the degree of public interest on the one hand and the privacy aspects on the other.

4.9 A Stringent Regime of Quality Control

The government emphatically maintains that, given the status of basic registers, the authentic data must be accurate, up-to-date and complete. To achieve this, it is necessary to establish clear and efficient quality control procedures. This applies equally to the realised level of excellence. Needless to say, the above-mentioned report obligation plays a key role here as well.

4.10 Procedures are needed so that clients can fulfil their obligation to participate in the decision-making

The demands made on a basic register system may change in the course of time. The government maintains that, when this happens, it may be necessary to adjust the content and the organisation and to review the administrative foundation or the legislation of basis registration. Obligatory input from clients is seen as important, not least because they need the authentic data in basic registers to do their job.

4.11 The Basic Register needs to have a Clear Position in the Overall System of Basic Registration and the Interconnections need to be Defined

The government says that a system of basic registration needs to be internally consistent if it is to work efficiently. In our view the government should make it absolutely clear that it actually wants a system. We shall return to this in paragraph 5. If the government does want a system then this point needs no elaboration.

4.12 Authority over the Authentic Registration should rest with a Government Agency, with one Minister Responsible for Realisation and Operation

The government is absolutely clear on this point. One minister will be responsible for each basic register, because basic registers are crucial to government efficiency as a whole. The day-to- day management can however be outsourced to a public agency other than the department of the minister concerned or even to a semi-public institution or a private company. This would always take place under clear conditions.

Closer scrutiny reveals that some of these demands are more concretely formulated than others. For example, the government is not exactly explicit about accountability arrangements or about the funding of basic registers or a registration system. This situation carries a risk that all sorts of discussions will arise about the purport of the criteria when the legislative proposals for the different registers are being developed. It is therefore not inconceivable that the different proposals offer totally different solutions. This then raises the question of what basic registers are all about in meta-terms: a system or a collection? This question is easily answered.

5. SYSTEM OR COLLECTION

It may be inferred from the previous section that optimal use not only has to do with setting up various basic registers, but also requires that various relationships exist between those basic registers. The question can therefore be asked whether a collection of basic registers should be involved, or, instead, a system. Ex-Minister Thom De Graaf talked in terms of the latter; the current Minister of Government Reform, Alexander Pechtold, is much more reticent in this regard. He has not gone beyond announcing a “system handbook”.

With the path, which will be taken in that case, the chance that there will only be a collection of at best partly related basic registers is much greater than merely hypothetical in our view. Although the Minister is proposing direction, frameworks and operational facilities, to be set forth in, as stated, a system handbook, this is as far as it seems to go for the time being. That would be very regrettable, because, however well-designed an individual basic register may be, optimal use will never be achieved without creating a system, if only because basic registers must use each other's officially certified data. We give an example: the basic register for parcels of land will very likely designate the cadastral designation as officially certified data. You cannot really use this for all sorts of applications if you do not know who the related party holding title is. In a certain sense, you "extract" this from the basic registers for persons and businesses.

A second point may be inferred from this example. Essentially, what is involved is not a system of basic registers, but a system of officially certified data, which has been included in the different basic registers. In this context, then, officially certified data is data as also meant by various officials from the Ministry of the Interior: Data which is collected only once and stored at one location, and which must be used within the entire public sector.

If you want to achieve that, then not only must this sort of data be designated, but it also has to occur in a manner, which is as logical as possible, with the quality requirements for and the relationships between the data being regulated. In that case, you are talking about a system.

If you want to have such a system work, you must enact regulations at a central level (under or pursuant to law or policy rules). That can and will affect autonomy in setting up the information systems at ministries, other government agencies and independent administrative bodies. That is inevitable. If you do not want this, you should not try to set up a system of basic registers in the first place.

6. THE BASIC REGISTERS FOR NATURAL AND LEGAL PERSONS

The basic registers for 'natural and legal persons' – otherwise known as the persons and business registers – form the cornerstone of the basic registration system. Without these two registers there is no way that a system (or even a database) could work efficiently; after all, they are not only themselves closely connected (e.g. a person may be the manager of a business), they form crucial nodes for all other basic registers. For example: a person (basic persons register) may own a business (basic business register), which is housed in a building (basic building register) at a specific address (basic address register). Suppose this person also owns the land on which the building stands (basic parcel register) and the business is situated at a specific location (basic map register). The person and the business may run various cars (basic number plate register) and employ staff (register of wages, employment and benefit relations). If the business is doing well, it will pay tax; the person's income is also taxable (income and assets register). There may be even more interconnections in this example than we have identified here; these will certainly not decline in number if more registers are added to the system.

Both registers are based on existing records. 'Persons' on the municipal personal records (GBA) and 'Businesses' on the registers of legal persons in the Chambers of Commerce.
The municipal records are being converted into the basic persons register as part of the GBA streamlining programme.

Most of the data in the current GBA consist of the name, birth details, gender, marital status and sofi (social-fiscal) number of the registered persons. The GBA is regulated by law. Each municipality manages a GBA for its own inhabitants. Only 650 organisations – including over 200 municipal organisations – are members of the national GBA, leaving hundreds of organisations, which have not yet joined. It is also well known that the GBA is not always publicly accessible in municipalities.

The aim of the operation is to incorporate the GBA as the basic persons register in the data registration system of the government with a view to maximum utilisation in the public sector. Radical changes will have to be made to laws, processes and systems, and organisations will have to be internally adapted. If everything goes according to plan, the legislation should be in place and the facilities should be available by 01-01-2007. Implementation will follow.

The costs of the project are high, as in the case of the formation of the GBA many years ago.
The benefits will come in the form of, amongst others, a sharp fall in administrative expenditure not only in the municipalities but also at all levels of government and in the business community.
The Chambers of Commerce currently maintains the business registers. There are, in addition, all sorts of government organisations with registers containing information on businesses. But, there is no register that lists all businesses, organisations and their addresses. To complicate things further, the term 'business' is defined differently in different registers. The situation as it now stands is leading to work duplication, a high risk of errors, wasted government and company time and unnecessarily high administrative costs. The basic business register must list every business and legal body under a unique identification. This will lower the costs of administration, create judicial equality and facilitate electronic communication between government and organisations. The basic business register should contain, at the very least, the name, address and foundation particulars of businesses, supplemented at a later date with economic activities and ownership structures.

The bill to regulate the basic building register will be submitted this year to the States General.

After implementation (around 2010) both registers must function as fully-fledged reference sources in line with all the requisite principles.

7. BUILDINGS AND ADDRESSES

7.1. General

In the Netherlands the total value of buildings is 1800 billion euros; this makes buildings by far the greatest capital asset in the country. Construction also accounts for a very large share of national investment. The real estate construction sector consists of 30,000 firms providing over 300,000 jobs. Approximately 70,000 people are employed in real estate policy, organisation, management and registration in several thousand private- and public sector organisations, thereby making buildings (construction industry) a macro-economic variable. It is extraordinary, in the light of these facts that the Netherlands has been debating for decades whether a need exists to legislate for a municipal register of buildings and addresses.

In 2000 the debate gained momentum from the 'Streamlined Basic Data' project and the introduction of the basic registration system. This was more or less inevitable as it would be impossible to develop an efficient system of basic registers without a basic building register (BBR) and a basic address register (BAR). Unlike the other registers, these needed to be set up from scratch. The Association of Netherlands Municipalities (*Vereniging van Nederlandse Gemeenten/VNG*) commissioned a study on the financial, organisational, legal, technical and administrative feasibility, of basic registers, which it then used as a draft concept. This concept set out the principles for the organisation, the administrative management (core document register and buildings register) and two data dictionaries. The government on 11 June 2004 approved it. This is how the BBR and the BAR came to be among the six main basic registers to be introduced first.

The BBR and the BAR do not only involve new legislation but also newly codified laws and regulations. Over the years official building regulations with widely varying concepts and registration procedures have evolved in numerous domains. In this administrative hotchpotch there are 25 different definitions of the term 'building' and virtually no official procedures for addresses. Each municipality was free to set up its own system. The fact that the system is more or less the same in most cases is due to a fortunate coincidence.

Strictly in terms of information the BBG and the BAR are seen as two different registers; after all, address details in the BAR are used on a large scale without involving building data. In actual fact, the BBR and the BAR were established and are maintained together because of their many interconnections.

7.2. Registration Principle

The administration of the BBR and the BAR consists of two parts: a repository of core documents containing all the official decisions and a register of the updated data from the core documents. Hence, the register contains a collection of documents, describing the situation at a given moment in time, and an overview of the updated situation. There is nothing new about this approach; indeed, it has been applied for a very long time to large public databanks such as the trade register, the population register and the land register. The

aim is to ensure that the basic register can be authenticated by core documents. In the case of buildings, the core documents, which qualify for the register, include planning permission, conversion permits, demolition licences and designation changes. In the case of addresses the core documents include decisions on the names of towns/cities, municipalities, streets, house numbers and postcodes.

Only buildings which are accessible to people (accessible objects) and where the space behind the front door is intended as a logical unit (for habitation or business purposes) may be listed in the BBR. Other structures and installations (e.g. bridges, pumping stations, quays, piers, high-voltage antennae, telephone antennae, and viaducts) are not listed in the BBR or BAR at present. As the BBR differentiates between multiple- and single-dwelling buildings, a better name would have been the *basic register for buildings and addressable objects*. What is more, the BBR also includes trailer sites and houseboat moorings. Be that as it may, the term Basic Building Register has been retained. The BAR contains address details for buildings, moorings and trailer sites.

7.3. Content

To spare start-up costs and to keep the registration manageable it was decided that the BBR and the BAR would include only a very limited set of data.

BUILDING	ACCESSIBLE OBJECT	SITES AND MOORINGS
Building identification code	Object identification code	Identification code
Geometry (contours)	Building identification code	Geometry
Year of construction	Geometry (accessible object)	Ref. main address (BAR)
Building status	Ref. main address (BAR)	Ref. secondary address (BAR)
Issue date of document	Ref. secondary address (BAR)	Issue date of core document
Document reg. no.	Designated use	Document reg. no.
	Surface area	
	Issue date of core document	
	Document reg. no.	

TOWN/CITY	STREET NAME (public space)	NUMERICAL REF.
Identification no.	Identification no.	Ref. identification no.
Name	Name (public space)	House no.
Geometry	Identification code (town/city)	House letter
Document date	Type of public space	House no. suffix
Doc. no.	Geometry of public space	Post code
	Document date	Identification no.
	Document no.	Type of addressable object
	Document reg. no.	Document no.
		Doc. reg. no.

Figure 1: Attributes in the BBR and BAR

The registers include only data that are used on a large scale: just 21 attributes for buildings, accessible objects, trailer sites and moorings and 22 attributes for town/city, street name and numbers. Accessible objects, trailer sites and moorings are assigned addresses, which are maintained in the BAR. One frequently heard comment is that this confined set of data will limit the use, but this has not been the case so far. (The Dutch alphabet consists of only 26 pieces of data, enough to compile this complicated document).

7.4. Connections with other Basic Registers

The address and the respective building(s) play a major role in automated and non-automated public records and registration systems. Addresses are always important in registration regardless of whether persons (home addresses), businesses (business addresses) or buildings (object addresses) are concerned. They lie at the heart of automated public systems and serve as the data-access key. In all domains of public administration the function of the address is still grossly underestimated when it comes to information services to citizens, inter-organisational information exchange, the practical usability of data, efficient and expedient management and so on. Even though the address forms the hub of a public records system, street names and

house numbers are still processed in the different registers at moments left to the discretion of the manager and with different specifications and different degrees of revision, completeness and reliability. As a result, it is not uncommon for connections between public registers to be wrong or even unrealisable. This undermines good public services amongst other things.

One should, however, bear in mind that an address represents different things in the different registers. An address in the land register does not relate to the same type of object as an address in the building register. Here are a few examples by way of illustration.

REGISTER	**OBJECT**	**OBJECT IDENTIFICATION**	**ACCESS**
Tax register	Tax object	Real estate tax no	Address
Building register	Accessible object	Accessible object no.	Address
Land register	Land registry parcel	Land registry parcel no.	Address
Geometric database	Real estate element	Coordinates	Address
Population register	Natural person	Citizen service no.	Address
Trade register	Legal person	Business information no.	Address

Figure 2: The relationship between addresses and object identifications

Each register relates to one specific type of object. In the real-estate tax databases the object of registration is the 'tax object'. In the land register it is the land registry parcel, while in the geometric database it is 'the element'. In the building register it is the accessible object and in the trade, association and foundation register it is the legal person. In an automated register each individual object is identified with a unique designated code**,** the so-called 'object identification code'. In the tax database the object identification code is the 'real-estate tax no'. In the building register it is the 'accessible object number', while in the geometric database the element (e.g. a building) is assigned a set of coordinates. In the land register the land parcel is assigned a cadastral reference. This unique system is also used in other databases. For instance, in the GBA a natural person is assigned a 'citizen service no.' while in the Chamber of Commerce databases each legal person is assigned a 'business information no.' (See Figure 2 for an overview.)

It is clear from the last column in the above table that the various registers are accessed via the address. The address is already the most used and the most usable attribute by virtue of its integral role in public communication. The land register can, of course, be consulted via the parcel number, but it is very unlikely that the applicant will know this. The address is pure and simply a key with which connections can be established between identifications. Establishing connections on the basis of addresses alone – without connections to object identifications – will lead to errors. Close attention should be paid to this point when the basic data are being streamlined.

7.5 Phased Introduction

PHASE	NAME	PERIOD	ACTIVITIES
1	Preparation	till June 2004	Prepare decision-making Introduce decision-in-principle
2A	Details	June 2004 till June 2006	Organise the implementation Work out content and introduction strategy Agreements with core-document holders (municipalities)
2B	Stimulation	June 2005 till begin 2007	Voluntary introduction Draft legislation
3A	Introduction	January 2007 till June 2008	Submit proposals to Parliament Introduce in all municipalities Finalisation and enactment of legislation
3B	Completion	June 2008 till June 2009	Check quality of entered data Connect clients
4	Management	from	Fully operational BBR and BAR

Figure 3: Introduction of the BBR and BAR

Roughly speaking, there are two approaches for introducing a basic register: the revolutionary approach and the evolutionary approach. In the revolutionary approach, municipalities are obliged by law to have fully operational basic registers by a specific deadline. In the evolutionary approach the authorities agree that the designated holder of the core document will work on the introduction of the register in accordance with approved principles. The official regulations will come into effect later. The advantage of the evolutionary approach is that it facilitates cooperation between the various players (municipalities and the coordinating ministry) and eventually leads to better regulations and a more flexible introduction of basic registers. In 2004 the Minister of Housing, Spatial Planning and the Environment (VROM, the Netherlands) sent a letter to all municipal councils, informing them of the evolutionary introduction of the BBR and the BAR and advising them to pay close attention to the government-wide developments in this domain when taking policy and investment decisions within their own organisational model. The minister pointedly reminded them that the legislation on the basic registration of buildings (*Wet Basis Gebouwen Registratie/BGR*) would be enacted in 2009 and would come into force within a short timescale. The municipalities should therefore make an early start on introducing the BBR and BAR. The evolutionary approach is a good strategy but it is heavily dependent on transparent implementation and introduction costs and the anticipated benefits.

7.6. Management Structure after Introduction

Not much has been decided yet about the management structure. A distinction is drawn between strategic management (standards, quality assurance, user regulations, supply, responsibility, accountability, claims etc.), source management (collection, entries, processing, data availability etc.) and operational management (national databank of building

data). The way in which these functions operate will depend largely on the way in which the entire basic register system is managed. The coordinating ministry is likely to delegate many strategic powers to a central controller, who will be responsible for the tight connections (including links) between the registers. There will also be a common management team to take care of the transport of messages between basic registers and between basic registers and clients. At present, the source managers tend to manage the national databanks themselves, but a common management team (*Gemeenschappelijke Beheer Organisatie/GBO*) will control the withdrawal and addition of data.

7.7. Costs and Benefits

Early in 2004 a study was conducted into the costs and benefits of the BBR and the BAR. The costs of introducing the BBR in combination with the BAR were estimated at 84 million euros. This investment will deliver benefits worth almost 250 million euros to society, making for a positive balance of over 160 million euros. Only if a mere 30% of the benefits were realised would the introduction of the BBR and BAR be less attractive to society at large. The government stands to realise returns of 390 million euros, in which case, a positive balance of 305 million euros will be realised. If the returns are lower than 10% the balance will be negative. These calculations are based on the assumption that all parties bear the costs that they incur. The greatest cost bearers, the municipalities, have intimated that many of the benefits are only marginally realisable or not realisable at all, as they will be experienced in places where no costs are incurred. A specific number of hours saved a year by an employee may well be expressed in cash but it does not deliver any tangible cash benefits. There are recurrent discussions on the financial aspects of introducing and maintaining the system.

Meantime, talks are underway at ministerial level on a strategy for funding the entire system of basic registers. The current departure points are:
- obligatory registration = free registration *and* obligatory use = free use
- voluntary registration = paid registration *and* voluntary use = paid use

It may be inferred from these departure points that the debate on funding hinges primarily on the best way of defraying the costs of using the system. However, most of the costs stem from setting up and maintaining the actual registers. It does not go without saying that registrars will solve this within their own budgets while third parties reap the benefits.

8. BASIC REGISTER CADASTRE

The authentic data in the basic register cadastre consist of the classical trinity object-right-subject.
Object: authentic data are the cadastral boundaries and parcel numbers on the cadastral map and the size of the object. Also the cadastral identifiers of condominium rights are authentic.
Right: the legal names of the types of rights that are registered in the cadastre and the public restrictions that are registered in the public register of deeds.

Subject: name, address, date of birth and marital status of the owner will be authentic.

The links with the basic registers for natural and legal persons will be essential.

At this moment the cadastral registers are already linked to the GBA. Addresses of persons are copied from the GBA but the names of people involved in legal transactions are taken from the public register. If there is a supposed match with the GBA but the name is spelled differently, both spellings are registered in the cadastral register.

Once the law on the basic register for natural persons will be passed, this will change. From then on the basic register cadastre will contain only a link to the data that are authentic within the basic register for natural persons. These data will be collected when needed. Also notaries will be obliged to use the exact data from that basic register.

At this moment names of legal persons are only taken from the public register. Once the law on the basic register for legal persons will be passed, the basic register cadastre will contain only a link to this register.
The change of the law on Cadastre to introduce the basis register of cadastre will be discussed in parliament this year and implementation of the law will be probably in the beginning of 2007.

Because the cadastral registers are more or less de facto authentic, this process is expected to be smooth.

More energy has to be put into the linkages with the basic registers of natural and legal persons. The Dutch Cadastre has recently researched the conformity between the GBA and the cadastral registers and discovered a large amount of differences. All these differences have to be solved. Intelligent soft ware is available for this but will not solve all the differences. There is no insight yet in the differences with the register of legal persons in the Chamber of Commerce but expect even more differences. Besides that the technical interface has to be built.

A last complication is the following. The system of land registration in the Netherlands is a deed registration that is semi-positive. A person that has consulted the public register of deeds has good faith protection. The cadastral register however does not give the same protection. The cadastral register gives overview of the content of the public register of deeds and serves as an index but when there is a difference with the data in the public register, the latter has preference. In the system of basic registrations this is a weakness. The general expectation of the users of the data will be that the information is true. In fact, because of the high quality of the data in the cadastral register, the general expectation of society is that the information is true. For this reason a project is started to research the possibilities to extend good faith protection to the consultant of the cadastral registers. When that can be achieved, the basic register cadastre has the same status as the other basic registers.

9. MAPS

Two Maps are looked at to be basic registers in the system.
First of all the Topographical Base Map (TBM 1:10,00) will be described, secondly the Large Scale Base Map (LSBM 1:1,000).

9.1. Topographical Base Map (TBM 1:10,000)

Already in the nineties a lot of investigations were made to define whether the TBM had to become a basic register.

The TBM is officially pointed out to be one of the basic registers of the system three years ago at the same moment of merging the National Mapping Agency to the national Cadastre organisation.

The content and the structure of the registration are defined through a wide discussion with users. Finally the GML-scheme is put up with support from different Technical Universities in the Netherlands.

New is that all the topographical elements are structured to objects and connection to the other registers for example the Buildings and Addresses is easy to make true the attribute or key-information of the objects.

The digital Map has its major function in planning and policy development on regional scale.
The accuracy is about 1-3 meter and the actuality has to be shifted from four to two years. It was planned that in the spring of 2006 the complete register is available for the whole country in the new format and specifications.

One of the points of discussion is the obligated use by municipalities, which have their own 1:10,000 digital topographical base map. Looking to the rules and requirements of the Authentic Registrations these municipalities have to change their registrations for the national one. To solve the practical problems in consequence of this, the management of the TBM is discussing now with some of the municipalities whether it is possible that their source information can be brought in to the National Database and a yearly synchronisation or update is possible.

The total costs of maintenance are estimated on 4 Million Euros. The coverage of the costs is done by different contributions from the governmental departments. Ten percent has to be covered through selling to private users.
In general for all the registers there is now the discussion going whether the private use has to be free of charge and the government does the cost recovery.

9.2. Large Scale Base Map (LSBM 1: 1,000)

The LSBM is still under discussion whether it will become one of the registers in the system. It is together with the Cadastral Map the only registration, which gives a non-generalised model of the reality. Originally developed in 1975 and finished in 2001, the Map is used by all Municipalities, nearly all Utility companies, Cadastre, Water boards and Counties. It has become a standard in the Dutch geo-information infrastructure. The total costs of production is about 250 Million Euros, nowadays the maintenance is still 20 Million Euros per year.
It gives an accurate and detailed picture of the building blocks, roads and water.

The actuality is one year or better, in rural areas the buildings mostly have an actuality of half a year or better.

The organisation of the LSBM is very unique, for it is a Joint Venture between Private (Utility

Companies) and Public Parties (Municipalities, Counties, Cadastre etc.) Ten regional Joint Ventures having the copyrights is one of the issues that have to be solved in becoming a Governmental Register. The costs for updating and database management is covered by all the parties involved and the distribution is based on the importance of use. So Municipalities cover 30%, Cadastre 20% and the remaining 50% is divided under the five utility-functions.

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