PROGRAMME FOR OPEN STANDARDS AND OPEN SOURCE SOFTWARE IN GOVERNMENT (OSSOS)

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Contents

Summary

Users of software are highly dependent on their software suppliers. This dependence is reflected in the obligatory implementation of new versions, the obligatory purchase of new hardware, the unilateral alteration of licence conditions and the termination of maintenance agreements. These are just a few examples of practices that adversely affect organisations throughout the public sector from education and care to population records.

As a very large user of software and as a motor of the economy and, hence, guardian of free market forces, the public sector is striving to bring about a structural change in this relationship of dependence.

It has set itself the following objectives in this connection:

- to reduce dependence on external software suppliers and to increase the range of choice;
- to combat monopolies in the software market in order to prevent abuse of dominant market positions;
- to enhance the quality of government information systems in terms of accessibility of information, transparency of action, security and future-proofness;
- to reduce the cost of software implementations;
- to improve the exchange of data between government domains.

Open standards and open source software are crucial instruments for achieving these policy intentions. The use of open standards can prevent a situation in which an organisation is locked in to using the software of a specific supplier. This makes it possible to make combined use of the software of different market participants. As a result, the customer can choose the software component that provides the best price/performance ratio. The use of open standards provides the flexibility needed to establish links with other information systems in the future. In addition, open standards contribute greatly to the durability and accessibility of information.

Open source software too enhances the reliability and security of systems: the user can verify exactly how the software works, which means that it can be deployed in very critical surroundings. Software durability too is increasing: as the source code is available the program can also be modified in the future (even by other suppliers). The mere fact that bespoke and tailored software is purchased on open source conditions does not prevent a situation in which it can be acquired only from a specific supplier. Monopolies are eliminated above all by the fact that all suppliers once again have the same chance in the maintenance market.

Government authorities in other countries too are showing much interest in the use of open standards and open source software. In addition to the European Commission, many countries are independently pursuing an active policy.

A Programme is being started to encourage the use of open standards and open source software. This Programme is to be assigned to the ICTU, the Dutch organisation for ICT and government. The results of the Programme will be available for the entire public sector and for those outside as well

(private sector and private individuals).

As regards **open standards** the aim of the Programme is to encourage their use within the public sector. For this purpose its role is for the most part to provide information and advice. The Programme will endeavour to foster the exchange of knowledge and experience in relation to open standards within the public sector.

In this way the Programme will meet the need for continuous information about what (open) standards are already available both internationally and within the public sector. Standards are often changeable: most have a limited shelf life, for example because new ideas about software architecture become prevalent or because new technological advances occur. In addition, there is a need for access to practical experience of how standards are applied and how they interact.

The Programme also aims to create awareness within the Dutch public sector that **open source software** should be considered as a fully fledged alternative to closed source (i.e. proprietary) software. The Programme will do this by adopting a facilitating, informative and advisory role. It will endeavour to support policymakers and ICT managers in making decisions and to assist ICT managers in tackling the problems that occur after the choice has been made.

Three of the most obvious results which the Programme will achieve is the establishment of a catalogue of recommended open standards, the government-wide introduction of a software licence model under which the intellectual property rights are vested in the public sector, and the establishment of an Internet exchange platform where software can be exchanged between government bodies.

The Programme has a budget of EUR 3 million for a three-year period. An application for funding is being submitted to the National Action Plan (NAP). A large part of the funding will have to be provided by government ministries, provinces, municipalities and other government or related institutions, preferably through the secondment of staff.

1 Introduction

The Netherlands wishes to be among the leaders in the ICT field in Europe. To achieve this, the public sector has set itself ambitious targets, as laid down in the National Electronic Super Highway Action Programme (1994) and the follow-up to this in the form of the Digital Delta Action Plan (June 1999). An essential condition for the achievement of policy objectives in the field of e-government is a properly functioning government-wide ICT infrastructure. In addition, there is fast growing need for electronic communication between the various municipalities, provinces, ministries, services, institutions and implementing organisations.

The issues connected with the integration of the different ICT applications form a major obstacle to the implementation stage of e-government. For example, should we replace our existing different systems by a single integrated system and, if so, can this be obtained on the market? Or can we instead link the existing systems to one another? And what future-proof criteria should these systems fulfil? How can we avoid becoming dependent on a single supplier or a few suppliers?

These developments, the change in licensing policy of certain software suppliers and the initiatives taken by the EC and other Member States are factors prompting the development and implementation of an active policy in the software field. Two subjects deserve special attention in this connection: open standards (OS) and open source software (OSS).

In answering parliamentary questions[1], the Minister for Urban Policy and Integration of Ethnic Minorities, Roger Van Boxtel, has already announced the initiation of a programme to encourage the use of open standards and open source software within the Dutch public sector.

The Ministry of the Interior and Kingdom Relations (BZK) and the Ministry of Economic Affairs (EZ) have asked the ICTU to start preparations for this programme. A planner (‘quartermaster’) has been appointed for this purpose. The working title of the Programme is OSSOS.

Aim of this document

The aim of this document is to report on the work of the planner. The document also describes the objectives, ambitions and activities of the OSSOS Programme. The programme proposal is intended to provide clarity about the need for and value-added of a programme for open source software and open standards.

[1] Lambrechts and Bakker (2001) ; Voûte-Droste and Bakker (2001) and Lambrechts (2001), and more recently Tonkens and Vendrik (2010215130)

2 Software policy for the public sector

2.1 Definitions

As indicated in the introduction, the public sector has the intention of developing an active policy on software, particularly in the field of open standards and open source software. The meaning attributed to these terms in this Programme is indicated below.

2.1.1 Open standards

Standards may be open or closed. An open standard is taken to mean a standard which fulfils the following requirements:

- the costs for the use of the standard are low and are not an obstacle to access to it;
- the standard has been published;
- the standard is adopted on the basis of an open decision-making procedure (consensus or majority decision etc);
- the intellectual property rights[2] to the standard are vested in a not-for-profit organisation, which operates a completely free access policy;
- there are no constraints on the re-use of the standard.

Other standards are to some extent closed, in other words they are unpublished or possibly even secret, cannot be freely used or are the property of a company that can alter them at will. Often a distinction is made between de facto and de jure standards. De jure standards are standards which are adopted by an official body such as the ITU (non-treaty agency of the UN), whereas de facto standards are accepted standards which are not managed by such a body. De facto standards occur when the number of organisations applying the standards acquires a critical mass. The distinction between de jure and de facto standards has become less important because even non-official bodies (such as the IETF and W3C) adopt standards in a formal sense.

Delimitation

Open standards are available in many fields such as quality assurance, management processes, security and the exchange of data. In the context of this Programme the wide range of open standards is limited to:

Open standards in the field of information and communication technology (ICT) for the

[2] It is sometimes inevitable that part of a standard is based on the intellectual property rights of third parties, for instance under (software) patents. Where this is the case and no other solution is possible, arrangements are made for any person to be able to use these parts on reasonable terms. Such a standard will still generally qualify as an open standard.

benefit of the interoperability of information systems.

The interoperability of information systems is necessary in order to facilitate cooperation between (government) organisations and to coordinate business processes within and between organisations. Improvement of the exchange of data between applications can also improve interoperability between processes and sub-processes. The Programme does not focus on the substantive standardisation of these processes.

Standardisation at process level falls outside the scope of this Programme.

The Programme focuses on the open standards that allow the exchange of data. Four levels are distinguished in this connection: transport, exchange, syntax and semantics. See also Figure 1.

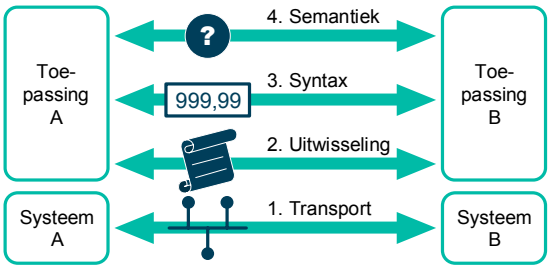


Figure 1 Four levels of standardisation for data exchange
[Application A – Application B – System A – System B –
1. Transport. 2. Exchange. 3. Syntax. 4. Semantics]

2.1.2 Open source software

Open source software (OSS) is software that meets two criteria:

- its source code is freely available;
- under the licence regulating the intellectual property rights and the use and re-use of the software and the accompanying source code, the licensee may access, use, improve, supplement and (in some licence models) distribute the source code.

An open source licence often stipulates that the source code of the product must be freely available. Many open source licences also stipulate that software which is derived from open source software or software which is a modified form of open source software must itself also be made available under the same open source licence. If the licence provides that the source code must be freely available, the source code of derived or modified software should also be freely available. In order to indicate clearly when software qualifies as open source software, the conditions to be fulfilled by a licence have been regulated by the Open Source Initiative[3]. Software released under this licence may then be called open source.

This freedom to modify the software means that interested parties work together to improve or

[3] For the conditions, see the OSF website: http://www.opensource.org

expand the software without questions of ownership hampering the cooperation. This new form of cooperation in which people from different organisations or countries work together, in either their official or personal capacity, to develop the software further is known as the *open source development method*.

2.2 Background and policy intentions

When government policy on open standards and OSS is formulated, it should be recognised that the public sector acts in various roles in this connection. The public sector is first of all a very large user of software. Each year it spends several hundred million euros[4] on the purchase of software licences and the development of bespoke and tailored software in order to be able to carry out its primary tasks.

In addition, the public sector has an important role as a motor of the economy and, in consequence, guardian of free market forces. From this position it attempts to promote the operation of market forces within the software market and encourage innovation. Market forces can be promoted by removing the barriers to access which arise through the abuse of a (de facto) monopoly or because parts of markets are screened off. As soon as new market participants can enter and competition is initiated, businesses will have the incentive to innovate.

Various factors have caused the decision to pursue an active public sector software policy. The policy intentions are explained in this section by reference to these factors.

2.3 Dependence, freedom of choice and innovation

Action to increase freedom of choice

The public sector is highly dependent on software suppliers and will remain so in the future. After all, the public sector is not itself able to develop the requisite software and does not regard this as one of its core functions. In early 2002, several suppliers unilaterally altered their licence conditions, thereby substantially increasing the costs for the public sector. This led to various questions in Parliament. Although there is no indication for the time being that this constitutes abuse of a dominant market position, there is a growing realisation that the freedom of choice is limited. Many government bodies do not know whether other software (open source software) is available as an alternative to the existing (closed source) software packages.

Future modifications

The purchased software will often remain the property of the supplier. The public sector pays for the right to use the software. This can have attractive benefits of scale since the software supplier can spread the development of its product among different customers in order to keep the price low. This

[4] Source: Statistics Netherlands (CBS) calculated that the public sector spent € 400 m on software in 1997.

benefit of scale does not apply to the same extent to bespoke and tailored software, which is, after all, developed specifically for a single user. The bespoke and tailored software is often a black box: the user has no information about the exact operation of the software or the exact specifications of the file formats. The freedom to have modifications or maintenance carried out by other suppliers is therefore excluded and the customer is locked into using the original supplier.

Strengthening the Dutch IT industry

Both open source software and closed source software provide opportunities for innovation. The disappearance of intellectual property protection arrangements would not mean the end of innovation. Software developers other than the original developers would then be able to add new functionality, repair faults and so forth. The opportunity to elaborate on existing knowledge would result in innovation (as is customary in science).

The Netherlands does not have a large software industry focused on the development of generic applications or package software. This is increasingly a world market dominated by a few very large players. In this respect the Netherlands is dependent on abroad. What is more important, however, is that this situation also creates a brain drain: expert Dutch software developers are moving abroad. However, the situation is different in the market for bespoke and tailored software and services. Here the Netherlands has a large number of organisations varying from small to very large which are occupied in providing this service. As indicated in the study carried out by IDC[5], 'open source software mainly provides opportunities (...) for IT service providers'. Encouraging the use of open source software by the Dutch public sector therefore ties in closely with the strengths of the Dutch IT sector and thus helps to generate high-quality employment in the area of software development and management.

Small markets

Some markets in the Netherlands are too small (in terms of size and/or capital) or the applications are too specific to induce software suppliers to develop software to meet their specialist needs. In these software markets there is often insufficient competition on the supply side. The development of software for these complex environments has therefore stagnated and there is little if any innovation. Examples of this type of market are the basic data records, education information systems and family doctor information systems. In such cases open source software can provide a solution. The public sector can develop a basic software module and make this available as an open source to the specific market. This ensures that the duty to provide information can be fulfilled, and at the same time improves access to the market because each party (whether existing or new) has the core module. The initial investment in a product is then much lower.

Policy intention 1:

Reduce the dependence on external software suppliers.

[5] Source: IDC, 'The economic importance of open source software in the Netherlands' , 1999, commissioned by the Ministry of Economic Affairs.

Policy intention 2:

Combat monopoly positions in the software market in order to prevent abuse of dominant market positions

2.4 Specific quality criteria

The public sector has a special position. Whereas in the private sector the application of open standards and open source software is viewed mainly from the economic perspective, other criteria apply in the public sector. On the basis of their public duties, government bodies have special responsibilities which influence the organisation of their information systems. Special quality criteria apply in this connection. Examples are:

- accessibility of information;
- transparency of action;
- security;
- future-proofness.

Accessibility of information

As long ago as 1997 the Dutch government recorded its policy on the electronic accessibility of public information in a policy document[6]. This policy document described the following objectives:

- provision of access to the administrative information of the public sector (laws, organisational structure, etc) for everyone in order to promote the democratic process;
- openness of information increases efficiency within the public sector itself;
- the economy is boosted if third parties are given the opportunity to develop value-added products using this basic information.

In recent years, this policy has been implemented by the creation of various on-line databases, including a 'legislation bank', a government directory and a guide to who does what in government. In fact, the use of open standards is essential if government information is to be made electronically accessible for individuals and the private sector too.

Transparency of action

As indicated in the final report of the ICT Committee and Government[7], all government action should be transparent. The term transparency is used here to mean that action by public bodies should be checkable and verifiable. This has consequences for, among other things, the data and information used by the public sector when acting and also for the data which it produces. This requirement of

[6] Parliamentary Proceedings 1996-1997, 20644, no. 30

[7] 'Citizen and government in the information society', ICT and Government Committee, chaired by A. Doctors van Leeuwen, September 2001.

transparency does not and cannot extend to all data. An exception would be information that is subject to privacy rules.

The transparency of the public sector applies not only to data but also to processes. The report in question recommends that: 'The individual citizen should have a fundamental right, namely the right to inspect process and product information'. The implementation of processes is supported by specialist automated systems. The operation of the systems determines in part how government acts. Transparency in government processes means that transparency is also necessary in the operation of government systems. A citizen can then check whether government action (for example, the payment of benefits) is taking place correctly.

Security

Citizens and businesses often have a statutory obligation to provide information to government. Government has the responsibility to ensure that these data are dealt with carefully. In this connection, government is increasingly dependent on the manner in which information systems are secured. Security is interpreted broadly in this connection: it includes both the security of the data in the systems themselves, access to the system and the availability of the system.

One way in which security can be verified is by inspecting the source code of the information systems. Open source software has, for security reasons, the great advantage that the source code is available. As a result, the government and also third parties can verify whether the software does exactly what it should do and that no unauthorised persons gain access through a 'backdoor'. Naturally, inspection of the source code alone is not sufficient to guarantee security, and supplementary (e.g. procedural) measures must be taken, if only to prevent a situation in which a version other than the production version is checked during an inspection.

If applications are to be used by many members of public, it is also important that the source code should be open in order to inspire confidence in the system, for example in the case of elections.

Future-proofness

Nowadays, a large part of the data which government uses, produces and records is stored in digital format. The rapid replacement of applications and the large number of file formats means that the future-proofness of digitally stored data requires special attention. Text files stored five or ten years ago in WordStar or WordPerfect 4.2 can no longer be read or processed by the current generation of word processors. Not only is it almost impossible to obtain the applications, but the syntax and semantics underlying the file formats are also unknown. In many cases the supplier no longer exists. The use of open standards in recording data in a digital format can avoid this problem. Even if the application is already outdated, the data can still be read (albeit, perhaps, with difficulty) because the file format is known.

Policy intention 3:

Enhance the quality of government information systems

2.5 Cost savings

Economic efficiency

Government is responsible for using its tax revenues as efficiently as possible. At present, however, there is no government-wide software policy that safeguards this efficiency. Important criteria for such a policy are the independence of a market participant, lower costs and continuity of operation. When software is purchased by government bodies, the selection criteria must include such factors as economic efficiency, transparency and functionality. On the basis of these criteria, open source products may be considered as an alternative to closed source products.

The wheel is constantly being reinvented

The efficiency described above can to a large extent also be achieved by using the knowledge that has been acquired and the products (or sub-products) that have been developed elsewhere within the public sector. In this way, some of the design work in a software development project can be eliminated. It should be possible to achieve a cost benefit by increasing the re-use of software modules and software components within the Dutch public sector. However, it will be necessary to introduce standardisation and ensure that an infrastructure is available for support of the exchange process.

Licence costs

One of the most common arguments in favour of using open source software is that it is usually available free of charge and that the purchase costs are therefore low. In general, however, the purchase costs form only part of the total costs. Other major expenses are the management, maintenance and support of software. Open source software is becoming commonplace, as a result which professional service providers are finding it attractive to provide this type of service at normal rates. A comparison of the total cost of open as opposed to closed source software is dependent much more on the rates charged by service providers for the supplementary services than on whether or not the software itself is available free of charge.

Policy intention 4:

Reduce the costs of software development and software implementation

2.6 Exchange of data

Need for more intensive cooperation between government domains

Both the Dutch government and Dutch society as a whole want an improvement in the quality of public services and the functioning of the public sector. Such an improvement means, among other things, that citizens and the private sector must be able to communicate easily with the government, independently of how the public sector is organised internally. The demands of the customer are paramount in this connection. The architecture of e-government should therefore support and facilitate the following aims:

- the single-counter concept, which provides for several channels between government and client but means that all services can be obtained from a single ‘counter’;
- once-only provision of information by citizens, who also have control over their own personal data;
- once-only registration: authentic registers and streamlining of personal records;
- once-only notification and authentication in the case of communications with the public sector.

If these aims are to be achieved, there must be more intensive cooperation between government bodies at central, provincial and municipal level and within each of these levels. However, this is proving to be far from simple. Some of the underlying problems are the different forms of organisation, the lack of integration between front-office and back-office processes, the absence of an unequivocal meaning of data and the great diversity of ICT facilities. And there is also a host of other problems of an administrative, financial and technical nature. The use of open standards provides a real opportunity to address these problems effectively.

Limited ‘integratability’ of software

The report on ‘the Strategic Use of Software in the Netherlands' prepared on the instructions of the Ministry of Economic Affairs examined how the return on investment in software could be increased and what problems needed to be resolved in order to make better use of software. One of the problems was the lack of standardisation, as explained in the following quotation from the report:

> ‘The present situation regarding standardisation is that the insufficient provision and enforcement of open standards means that the capacity of software for integration is limited and that the legacy problem is increasing. The demand side plays an important role [...] in bringing about standardisation. Only the combination of forces on the demand side can break the vicious circle that obstructs standardisation. The supply side has too little interest in using standards and standard components to play a leading role in standardisation. The efforts of the demand side [...] will result in increasing use of open standards, but also in a decline in the development and use of 'de facto standards', in other words the type of standards that arise not as a result of agreements but because a certain product or product combination is sold and used the most often. Major providers who have not explicitly focused on the use of open standards have [...] paid the price for this.'

Exchange with the private sector

The report also states that the public sector, as a launching customer, must be considered able to mandate the use of open standards or to encourage their use by setting an example. For instance, if the public sector adopts a given standard for the exchange of data in government procurement procedures, this can generate critical mass for the application of the same standard by the private sector. In addition to the benefits of scale which this yields, it is also important to the exchange of data between the public and private sectors.

Policy intention 5:

> *Better exchange of data between government domains, between government and citizens and between government and the private sector*

2.7 Contribution to Strategic Coalition Accord

The Strategic Coalition Accord of the Balkenende Government designates four areas on which policy is to be focused: care, safety/security, education and integration. Various principles have been formulated for these areas, including improving the quality of performance by the authorities, minimising bureaucracy, and lightening the burden for businesses. The aim of policy is, above all, to ensure that government can be held accountable for its performance and actions.

The contribution of this Programme to the Strategic Coalition Accord is in keeping with the activities in the field of e-government and in the context of strengthening the economic structure of the Dutch private sector: increasing efficiency and hence reducing the costs of the administrative functions of government (by standardisation), promoting market forces in the software market (by standardisation and open source software) and improving public services and the quality of government functioning by means of better quality government information systems and improved exchange of data.

3 Planning stage

3.1 Study

The planning stage has involved studying to what extent there is a need for a programme to achieve open standards and open source software and what activities could best meet this need. The activities already proposed by the commissioning ministries and the planner have also been reviewed in this light.

The planner has held talks for this purpose with people in the public sector who are currently experiencing the disadvantages of a lack of government policy on open standards and open source software. In addition, discussions have been held with a few firms which are actively involved in standardisation and/or open source software. The complete list of people interviewed is contained in Annex A.

3.2 Support base

The interviews reveal emphatic support for the policy intentions. It follows that there is widespread support for the initiation of the Programme. Various suggestions for modifications to or changes of emphasis in the proposed activities have been made in the interviews.

3.3 Findings

The study has produced the following findings relevant to the implementation of the Programme.

Need for practical knowledge and experience

All the interviews reveal the existence of a great need for the exchange of knowledge. This applies both to the subject of open standards and to the subject of open source software. However, the nature of the need differs.

As regards open standards, the interviewees were already convinced that it was worthwhile applying open standards instead of closed standards. The main need was to obtain an overview of information about the great variety of standards and to exchange practical information about how certain standards can be implemented. However, an observation should be made here: as the target group is fairly heterogeneous in terms of level of knowledge and awareness, communications by the Programme should seek to reach those sections of the target group who are not yet convinced of the value of open standards.

As regards the second subject, there is still no consensus on what constitutes open source software (OSS). Most of those interviewed were also ignorant of the consequences of applying open source software. In this respect, therefore, the subject is still shrouded in mystery. The Programme will have

to pay more attention to interpreting and rationalising the debate on open source software than is the case in relation to open standards.

Need for open standards is often project-driven

The need for knowledge, advice and practical support in the area of open standards occurs mainly in connection with projects and not in relation to continuity. The development or modification of information systems is achieved almost always in project organisations. The project organisation often follows its own course in the design stage, which is also strongly influenced by the constraints of time and money. External experts are involved in almost all projects. Often they have their own ideas on what is the best architecture and what standards should be used. The software developers too leave their mark on the final result. Many of them have specific experience of particular development environments and programming languages and have a natural and understandable preference for their use.

Where the use of standards already needs to be coordinated within the public sector, it is often unknown how and with whom this should be arranged. Nor do most project organisations consider that there is an obvious necessity to establish a government-wide initiative in order to resolve their own problems. In consequence, these project organisations are to some extent engaged in solving identical problems, without making use of ideas, experience and solutions developed elsewhere.

Financing from project budget is difficult

Since the need is related to projects, as indicated in the previous section, it is difficult to arrange funding for the OSSOS Programme. The budgets have been allocated to specific projects and provide no scope for financing a continuous programme of this kind. However, the specific advisory services of the Programme can be acquired on a contract basis.

Resistance to standardisation is limited

The standardisation of ICT has frequently generated much resistance in the past. This is because standardisation means, by definition, a restriction of freedoms. The interviews revealed that this alleged fear of standardisation is virtually non-existent in relation to open standards. Indeed, it is evident that in certain circles standardisation is considered desirable because of the great increase in the complexity of ICT. Given the pace of technological change and the rapid development of new concepts of software architecture, it has become much less easy to make the correct choices in respect of software architecture. There is a universal realisation that 'island automation'[8] results in choices that are by no means optimal. The level at which standards are imposed largely determines the extent of support or resistance. Standards at semantic level are generally specific to the sector concerned and can therefore be best defined by the sector itself.

[8] This term is used to describe a situation in which an information system is designed without taking account of its environment.

Verifiable security as an argument for open source software

In environments where the security and integrity of data have to meet stringent requirements, the use of software whose exact operation is unknown poses a risk. Open source software is preferable in such an environment since the software can be fully validated.

Fear of ivory tower image

Projects and programmes in which knowledge is gathered and disseminated run the risk of being viewed, rightly or wrongly, as an ivory tower. Warnings about this were given by the respondents in the interviews, who emphasised the importance of the pragmatic transfer of, above all, practical knowledge and support.

4 What will the Programme do?

Two lines of action have been developed on the basis of the policy intentions: promoting the use of open standards and creating awareness of the possibility of using and developing open source software.

Both lines of action are implemented in this programme.

4.1 Line of action 1: Open standards

4.1.1 Role and terms of reference

The aim of the Programme is to encourage the use of open standards within the public sector. For this purpose, its main role is to provide information and advice. The Programme focuses on the exchange of knowledge and experience of open standards in the public sector.

In this way the Programme meets the need for the continuous availability of information about what standards, particularly open standards, are readily available both internationally and within the Dutch public sector. Standards often have a changing nature: most standards have a limited shelf life since ideas about software architecture evolve and because technological advances occur. In addition, there is a need of information about the past application of standards and their interaction in practice.

4.1.2 Management

The Programme does not have the mandate to impose standards. The imposition of standards would, after all, not be in keeping with the role of providing advice and encouragement. The advice would be much less objective and independent if the adviser were also the person who determines the standard.

It is evident from a number of the interviews conducted during the planning stage that the willingness to accept standards is increasing. Nor was any evidence found during the interviews to support the notion that there is a strong feeling that the imposition of standards is not in keeping with the Dutch culture of consultation and consensus. In the health field too[9] there has recently been a recommendation for the establishment of an independent authority which has the statutory power to require care providers to use open standards. Indeed, the ITO has itself advocated the setting up of an authority which can enforce the use of open standards in order to expedite the process. The commissioning ministries, the ICTU and the planner are aware that in view of the role and terms of reference of the Programme the policy intentions can be achieved only partly. After all, advice on

[9] ‘E-health in sight’, Advisory report of the Council for Public Health and Care to the Minister of Health, Welfare and Sport.

standards can simply be disregarded.

The question is whether the Programme should be given such a mandate. The commissioning ministries and the ICTU take the position that this would be undesirable for various reasons. The recommendation is that authority should not be vested in a specific organisation and that emphasis should instead be placed on the result. The term result is taken here to mean a catalogue of recommended open standards (see also 5.2.2). The process by which the open standards are chosen should be carefully organised and each party's interests should be respected. The Programme will play a supporting role in this connection. If public sector software policy and hence the activities of the Programme are ratified by a decision of the Dutch government, this will help to generate support and create a mandate for the standardisation process.

It is also recommended that a multi-stage mandate model be chosen. In cases of standardisation specific to a given sector, such as health care or social security, the mandate should be vested in an institution which has expertise in the subject matter of the field concerned. This is because such standardisation is often at the semantic or process level. The mandate is vested in the process owner in the case of cross-sector standards and standards at the transport, exchange or syntactic level.

4.1.3 Standards not to be developed independently

It is not the aim of the Programme to develop standards independently. However, *where commissioned* by those needing standards, the Programme will supervise the development of specific standards relating to the exchange of data between government agencies from different fields. This would include, for example, the conclusion of agreements about data standardisation.

4.1.4 Limited participation in international standardisation forums

Only in special cases will the Programme actively participate in international standardisation organisations. In specific policy fields (such as privacy, the use of biometrics in relation to travel documents, and public key infrastructure) the Dutch public sector wishes to participate or even take the lead in standardisation at the international level. However, the Programme does not have a role to play here, since this will (or rather should) be tackled above all from specific policy fields. Naturally, the Programme will monitor international developments relating to open standards since this is in keeping with its role of providing information and advice.

4.1.5 Interaction with the private sector

The activities of the Programme are primarily focused on the public sector as a whole, in other words government ministries, provinces, municipalities, autonomous administrative authorities, administrative organisations, water control corporations etc. This is in keeping with the charter of the ICTU. However, the results of the Programme are emphatically public, so that the Dutch private sector can benefit from them. In addition, the public sector will place greater emphasis on the application of open standards in its exchange of data with citizens and the private sector. This will be

encouraged not only by the Programme but also by other programmes such as 'ICT and administrative burdens'.

4.1.6 Foreign initiatives

A policy to promote open standards has existed in a number of European countries for some time. For example, the *Programme d'action gouvernemental pour préparer l'entrée de la France dans la société d'information* (PAGSI) has been in force in France since 1998. This mandates the use of open standards (RFCs) for the transport of data. An authority was established in 2001 to arrange for the standardisation of data descriptions on the basis of the open XML standard. The United Kingdom has adopted as an objective the structural improvement of interoperability between different organisational agencies and heterogeneous applications. The e-Gif (electronic government interoperability framework) initiative focuses on the selection of interoperability standards which are imposed on the different parts of the public sector. The most recent version of the e-Gif framework provides an extensive list of standards for, among other things, data communication and messaging. Some standards have already been adopted and others are still being researched.

Various initiatives for standardisation on the basis of XML already exist in the Netherlands, for example the Work & Income Implementation Structure (SUWI) in the social security field, the database of basic legislation, the water information model and the Routing Institute for National Information Flows (RINIS) in the social security field (national social security and tax registration number).

4.1.7 Contribution of open standards to policy intentions

The line of action to be taken in the field of open standards helps to achieve the policy intentions in the following way:

Policy intention	**Contribution to open standards:**
Reduce dependence on external software suppliers	• The use of open standards can help to prevent a lock-in situation in which only the software of a particular supplier is or can be used. This makes it possible to combine use of the software of different suppliers. In this way, it is possible to choose the software component which provides the best performance in relation to price. • The use of open standards can also provide the flexibility needed to link a system to other systems in the future.
Combat monopolies in the software market in order to prevent abuse of dominant market positions	• The use of open standards can prevent a lock-in situation in which only the software of a particular supplier is or can be used. This makes it possible to combine use of the software of different suppliers. In this way, it is possible to choose the software component which provides the best performance in relation to price. • The use of open standards lowers the threshold for access to the software market and specific parts of it.
Enhance the quality of government information systems	• Greater accessibility of information: open standards enable everyone to obtain access to information (for example the application of the WAI guidelines for website accessibility). • Greater durability: if the syntax and semantics of information are recorded in an

	open standard, it will be possible to read, understand and exchange the information in the future too.
Reduce costs	• The costs of designing and constructing information systems can be lowered by using open standards. Not only will it no longer be necessary to reach (time-consuming) agreements, but use can also be made of existing implementations of an open standard (such as the TCP/IP software component for network transport). • The use of open standards can help to prevent a lock-in situation in which only the software of a particular supplier is or can be used. This makes it possible to combine use of the software of different suppliers. In this way, it is possible to choose the software component which provides the best performance in relation to price. • Since open standards are freely accessible, knowledge of the standards is more widely available. The expertise is therefore less specialised and hence cheaper too.
Better exchange of data between public sector domains	• The use of standards in general and open standards in particular is a precondition for the exchange of data. • The use of open standards can also simplify the future exchange of data between government information systems, for which provision has not yet been made.

Table 1 How open standards help to achieve the policy intentions

4.2 Line of action 2: open source software

4.2.1 Role and terms of reference

The Programme focuses on creating awareness within the Dutch public sector that open source software can be considered as a fully fledged alternative to closed source software.

The Programme fulfils this task by providing information and advice and facilitating the use of such software. The Programme focuses on supporting policymakers and ICT managers in making such decisions and on supporting ICT managers in dealing with problems that arise after the choice has been made. For this purpose, the Programme will, among other things, carry out research into the total cost of ownership of OSS and develop its own government-wide OSS licence model. It will play a facilitating role by creating a software exchange platform for the sharing of software, software components and specific software distributions and will offer support by facilitating reference implementations.

4.2.2 No need for decision in principle

Unlike the situation in relation to open standards, it is not necessary to take a decision in principle on the adoption of open source software. OSS products are not by definition better than closed source software alternatives. Every public sector body must itself decide whether OSS can make a worthwhile contribution to its own operations or to those of related institutions or other government bodies. Consideration should also be given to whether OSS would be preferable in the light of specific policy objectives or special quality criteria. The use of open standards is also relevant in

making this assessment. Open source and closed source software are comparable only if closed source software makes use of open standards. If closed source software does not use open standards, the use of open source software is preferable.

Ultimately the choice will be determined by a combination of economic and quality factors.

4.2.3 OSS not limited to specific applications

OSS is often thought of in conjunction with specific software applications developed by third parties. It should be emphatically pointed out that the licence model is the factor that distinguishes open source software from closed source software. When acquiring both bespoke software and specific modifications to software packages, public sector bodies should stipulate that the source code is released. If it later becomes necessary to modify the bespoke software, they will then be less locked in to the original developer.

4.2.4 Public sector as OSS developer

In cases where the public sector has a major interest in ensuring interoperability and where open standards are insufficiently available, government can provide a stimulus by facilitating *reference implementations*[10]. Interoperability can be enforced if government develops or commissions the development of software and software components and makes these available on OSS licence terms. This instrument can also be employed in order to boost non-functioning markets which have a limited number of customers and providers. This idea also underlies the 'Super Pilot Projects', in which four municipalities are developing software for electronic services to the general public. This software is being made available to other municipalities in the form of modules. The development of a basic package which could be used by software developers to produce specific modules is also being considered in the project to modernise the basic database records.

4.2.5 Contribution to policy intentions

The line of action taken in respect of open source software helps to achieve the policy intentions in the following way:

Policy intention	**Contribution to open source software:**
Enhance the quality of government information systems	• Better system security: open source software enables the user to verify exactly how it operates, so that it can be used in very critical environments. 'Backdoors' or other undesirable code can be identified and removed. • Greater reliability: the open character of open source software can help to ensure that faults in software are identified and rectified at an earlier stage. • Greater durability: as the program code is available, the program can also be modified in the future.
Reduce dependence on	• Open source software allows the public sector to have software developed and

[10] 'Reference implementations' are developed in order to illustrate the operation and implementation of a given standard.

external software suppliers	maintained by different parties. • Open source software can easily be provided with extra functionality developed by a different supplier. • Much OSS is developed by groups of individual programmers. The public sector itself employs a large number of programmers who can be used not only to develop but also to maintain and enhance specific software. Using the Internet as a means of communication, developers from all parts of the public sector can assist in this respect.
Combat monopolies in the software market in order to prevent abuse of dominant market positions	• If it is stipulated when software development projects are put out to tender that the intellectual property rights are vested in the customer (open source conditions), this does not necessarily prevent a qualifying supplier from acquiring a monopoly. The best way to prevent such a monopoly is if all suppliers have the same opportunity in the maintenance market.
Reduce costs	• Open source software has no licence costs or only very low licence costs. • The abuse of monopolies (see previous point) can push up prices. • The licence conditions of open source software permit software to be distributed and re-used.
Increase interoperability between public sector bodies	• Open source software generally uses open standards. • It is always possible to modify the software so that it supports a standard, particularly an open standard.

Table 2 How open source software can help to achieve the policy intentions

4.3 Cooperation

In order to be able to carry out the above activities adequately, the Programme will accumulate its own expertise and make use of existing knowledge and experience gleaned from the networks in which the Programme participates. In its capacity as a centre of expertise, the Programme will play the role of intermediary: i.e. matching supply and demand in the field of open standards and open source software.

For this purpose the Programme will keep in touch and enter into partnerships with national initiatives (NICTIZ, Kennisnet Foundation, ICT at School Foundation, eGEM, SBG, PEP, Police Management Committee, Syntens/OASE, ECP.NL, EAN Nederland and BKWI), European programmes (IDA and KP6/IST), international standardisation organisations (W3C and IETF) and initiatives undertaken by other European government bodies (e-Envoy, PAGSI and BerliOS).

5 Activities

5.1 Overview of activities

The table below indicates the activities undertaken in the two lines of action. Since the Programme focuses on creating awareness in order, ultimately, to bring about a change of behaviour, the table distinguishes between activities intended to create awareness and generate interest among the target group on the one hand and activities that assist the target group on the other.

Open standards

	Aim	Activities
Attitude	Create awareness among the target group about the advantages of open standards and catch their interest by showing how they will stand to gain in practice	• Disseminate information about the advantages of open standards in articles and news reports in the public and internal media, brochures, websites and information meetings
Behaviour	Remove uncertainties or obstacles to the application of open standards	• Prepare a catalogue of recommended open standards in keeping with an overarching e-government architecture • Provide support in the form of advice and knowledge transfer to government bodies when they themselves develop and apply open standards

Open source software

	Aim	Activities
Attitude	Create awareness among the target group about the advantages of open standards and catch their interest by showing how they will stand to gain in practice	• Pass on OSS knowledge and experience • Design environment for interoperability tests • Research the consequences of OSS in terms of the total cost of ownership • Carry out reference implementations
Behaviour	Support the target group so that open source software can be considered as a fully-fledged alternative in practice too	• Facilitate the exchange of software • Develop intellectual property rules for software development, with accompanying software licence models • Support model projects by providing knowledge • Initiate training courses for the management and support of OSS • Certify suppliers of package and/or bespoke software

The activities are described in more detail in the following sections.

5.2 Open standards

5.2.1 Dissemination of knowledge and experience about open standards

The Programme will be proactive and will, on request, provide its target group with information about open standards. Attention will be paid in particular to promoting awareness and interest among the target group. For this purpose, information meetings will be organised, brochures published and information disseminated on the website. The following questions will also be answered:

- what are open standards?
- why should I apply open standards (business case, model project)?

At a later stage the information will focus on the application of open standards and dissemination of the results of the other activities of the Programme. The following questions will be answered:

- how should I choose an open standard from the catalogue?
- what should I do if there is no open standard available for my purpose?

5.2.2 Preparation of catalogue of recommended open standards suitable for overarching e-government architecture

In order to assist government bodies to find the correct open standard, the Programme will prepare a catalogue of open standards suitable for the public sector. This catalogue will be made available on a public website so that the private sector too can obtain information about the standards used for exchange of data within the public sector. The software industry can then anticipate this by developing software in keeping with the standards.

The catalogue will distinguish between the level of standards, between domains and between applications. The following four levels of standard are recognised (from the bottom up): transport, exchange, syntax and semantics. Domains are, for example, municipalities, health care, education, etc. Examples of applications are particulars of names and addresses, patient files and values under the Property Valuation Act.

The catalogue will use the results of the e-government integration architecture project. See also 7.1.2 above.

5.2.3 Support (advice and transfer of knowledge) for public sector bodies when they themselves develop and apply open standards

In addition to disseminating the open standards, the Programme will offer expertise to projects within the public sector in which standardisation plays a role. With the help of the catalogue a project can be helped to find the correct open standard. Information and advice will be provided on applications of existing standards, new standards and how the standards can be applied together.

Where no open standard is available for the specific object of the project, the Programme will provide expertise for the purpose of facilitating the preparation of an open standard.

The following expertise will be provided:

- a step-by-step plan for the preparation of an open standard
- aids for promoting acceptance of an open standard
- aids for organising the management of an open standard
- guidelines for the implementation of open standards.

The network of contacts of the Programme can also be used to locate other parties able and willing to take part in drawing up an open standard.

5.2.4 Coordination with existing standardisation institutes and European initiatives in choosing and developing open standards

The Programme will also coordinate the development of the catalogue with other European initiatives (synergy) and standardisation institutes. This has the advantage of increasing the quality of the catalogue. In addition, the network of contacts which has been created in this connection can then be used in the Programme. Since almost all open standards are developed in an international context, international coordination is of great importance to the Programme if it is to be able to implement its role of providing information and advice. It will also be interested in analysing the results achieved abroad, for example by e-Gif in the United Kingdom.

If a suitable open standard does not exist, the Programme can consider the idea of developing a standard itself. See also the general position of the Programme as described in section 4.1. As a result of the exchange of information with national and international standardisation organisations, information can be obtained about initiatives that have already been undertaken. Where the Netherlands takes the lead, the Programme will (where relevant) attempt to generate a critical mass by organising the development with other parties.

5.3 Open source software

5.3.1 Dissemination of OSS knowledge and experience

The Programme will contribute actively to the dissemination of knowledge and experience within the public sector. In order to do this, the following activities will be carried out:

- the establishment of a public website on which knowledge about open source software will be made available:
  - general information about open source software (what it is and what I can do with it)
  - information to support the decision-making process for the use of open source software (checklist and advice)
  - overview of activities, projects and contacts within the public sector in the field of open

source software
    - references to information sources about open source software, including Dutch and European initiatives
    - e-mail distribution list about OSS news for the public sector
    - discussion forum where experience can be shared
    - publications (brochures, licence models, model contracts and research reports)
    - information about presentations and seminars on open source software.

  The website will be based on the premise that all information is public and should therefore also be accessible to people who do not work in the public sector. Some parts of the website could, conceivably, have a more closed character (e.g. a discussion forum solely for public servants).
- The provision of expertise in the form of advice to units of the public sector. In this way, assistance can be provided with the procurement, development and/or use of open source software.
- Creating attention through relevant media for open source software within the public sector:
    - articles and news messages in public media
    - presentations at seminars and policy meetings
    - information specifically for public sector media
- The development of information and course material for target groups such as:
    - policy staff (public sector)
    - management
    - ICT managers.

Knowledge development and test environment

In order to disseminate knowledge the Programme must first acquire it. Extensive experience of open source software has already been gained at various places both inside and outside the public sector. The Programme will continue to gather and collate information about such experience.

The Programme is also taking the following steps to develop its own knowledge:

- maintaining contacts with national and international government bodies, institutes, institutions and companies;
- doing its own research into:
    - model projects inside and outside the public sector;
    - long-term consequences of the use of OSS.
- configuration of **a test environment** where the Programme can, on request, carry out specific OSS tests, such as interoperability tests or tests comparing the functionality of different software packages. An example of an interoperability test of this kind is the exchange of test documents between Microsoft Word and Writer (OpenOffice) in order to examine whether information is being lost.

5.3.2 Research into 'total cost of ownership' consequences of open source software

The costs of open source software will be studied as part of the Programme. Information about the total cost of ownership is of great importance since this allows the increase or decrease in economic value to be estimated when deciding on the use of open source software. In this connection, research will be done into:

- the cost structure in different situations, such as:
  - the development and management of open source software
  - the use of existing open source software without the need for modifications to the software
  - the further development of existing open source software
- the development and maintenance of knowledge (courses, manuals, availability of expertise, etc)
- the management costs of open source software; earlier research shows in particular that the management costs of open source software are lower owing to the greater reliability
- outsourcing scenarios for open source software: what would it cost to develop open source software if this were to be commissioned by the public sector?

5.3.3 Carrying out reference implementations

The aim of carrying out reference implementations is to encourage certain initiatives on the part of government bodies (or market participants) by relieving them of part of the burden of the initial investment. In addition, reference implementations can support open standards. In certain standardisation environments such as IETF, there is a requirement that before a standard can be accepted as complete the interoperability must be demonstrated on the basis of at least two implementations of the software carried out independently of each other. It is customary in this connection for one of these versions to be made available as a reference implementation. Any disputes about the interoperability of standards can be resolved by testing in relation to a reference implementation.

For the sake of clarity it should be emphasised that it is certainly not the intention that the Programme should develop software and maintain it indefinitely.

Possible reference implementations could be:

- the development of Dutch distributions of open source software, with accompanying documentation;
- the development of showcases (for example, a Linux desktop for policy staff or for the front-counter staff of a municipality);
- the development of specific applications for small markets.[11]

[11] A small market is taken to mean a market in which there are relatively few customers (e.g. population records) or a market in which only a limited return can be achieved (e.g. education).

The carrying out of a reference implementation is a means of encouraging developments. However, this should be preceded by an assessment of whether investment in a reference implementation is warranted. The criteria for this will be laid down in the Programme.

5.3.4 Facilitating the exchange of software

A large amount of software is developed within the public sector. However, much of the development work involves duplication of effort. In order to reduce this inefficiency, a facility will be established for the exchange of public sector software (the *public sector software exchange*). This is by analogy with the Freshmeat.net and SourceForge.net sites (see figure 2 below). SourceForge.net also facilitates the development of open source software.

Figure 2 SourceForge.net

This exchange platform will be a website on which public sector software can be located and published:

- this will involve software which has been developed for and/or by the public sector and which fulfils the public sector licence conditions (see next section);
- specific distributions of open source software can also be exchanged;
- searches on the website can be carried out by reference to domains (municipalities, care sector, employment, etc) and to applications (system software, middleware, domain applications, etc).

The website will also have various community functionalities to facilitate communication about the software made available through the platform. Project functionality will also be made available so that open source projects can obtain funding (discussion list, version management system, own website, etc).

Although the exchange platform is intended for the public sector, it will in principle be freely

accessible to everyone outside the public sector too. Access may perhaps be limited to public sector users in certain situations. Facilities will thus be provided in such cases.

5.3.5 Development of intellectual property rights rules for software development, plus accompanying software licence models

The aim is to obtain the intellectual property rights in all software developed for and at the expense of the public sector. One or more generally applicable software licence models will be developed for this purpose for the Dutch public sector. Naturally, use will be made in this connection of existing and well-known licence models, parts of which will be modified where necessary.

This licence model will be included as a standard contract term in every public procurement operation from the starting date (early 2004).

Whether it is also desirable and feasible to include an extra clause in the licence model will be examined in the Programme. Such a clause should arrange for the source code to be made available through the exchange platform.

For the development of the licence models use can be made of certain generic licence models such as the BSD and GPL licences. As not all software is the same and different use situations also occur (including exceptional situations), it is likely that several variants of the licence model will be developed.

The Programme will draw up a handbook on the intellectual property rules relating to software for the public sector. This will clearly explain which variants of the licence model should be used and the significance of the matters regulated in these models.

In addition to the handbook, the Programme will provide advice and information on existing licence models to explain the implications of using a software package under a specific licence.

5.3.6 Provision of knowledge to support model projects

The Programme will support model projects in the OSS field by providing knowledge.

This support can assume various forms:

- advice on establishing/configuring an open source project (organisation and techniques);
- advice on choosing a licence model;
- advice on selecting and procuring open source software or selecting an open source software supplier/developer.

A condition for the provision of support is that the project publishes the results on the public sector software exchange and that the project may be used as a reference in publications.

5.3.7 Initiating training courses for OSS management and support

One of the factors deterring organisations from switching to open source software is the lack of internal and external expertise: i.e. properly trained open source software managers and support staff. In order to remove this deterrent, the Programme will encourage the establishment of OSS training courses. These could be given by universities, colleges, commercial training institutions and service providers.

The Programme will play an initiating role and will not itself develop or give such courses.

The Programme will examine whether specific training courses should be initiated in order to ensure that software developers are better equipped to develop open source software. These could involve familiarising the participants with:

- the techniques applied in open source projects;
- the means of communication within open source projects;
- the management aspects of open source software

5.3.8 Initiating certification of package and/or bespoke software suppliers

Finally, a certification programme will be established. Under this programme, software and software developers will be certified by reference to the specific requirements of the public sector licence model. This will make it possible for people without legal training to judge at a glance, without legal analysis, whether the product complies with the (yet to be developed) intellectual property rules of the Dutch public sector. The certification of software developers should be seen as a declaration that the software supplier complies with the requirements and conditions of the licence model.

The certification will be carried out not by the Programme but by an external, independent body yet to be selected.

6 Results

The two lines of action of the Programme, the activities of which were explained in detail in the previous chapter, are intended to produce the following results:

6.1 Open standards

Indicator 1 By the end of 2004 each person responsible for IT within the public sector and each manager having responsibility for an IT investment budget within this sector should be aware of the advantages of open standards.

Indicator 2 In 2003 the ICTU Foundation will, in the context of the Programme, become a member of the main international standardisation organisations on behalf of the Dutch public sector.

Indicator 3 By the end of 2003 a first version of the catalogue containing recommended open standards will be available. At the same time, a process will be in place for the creation of the catalogue and its updating at regular intervals.

Indicator 4 In 2006 public sector information systems will exclusively use open standards from the catalogue.

Indicator 5 In 2003 the Programme will start to publish brochures, manuals and other information to support public sector organisations in applying standards.

Indicator 6 In 2004 the Programme will have concluded definite partnership arrangements with standardisation initiatives for particular Dutch sectors.

6.2 Open source software

Indicator 7 By the end of 2004 each person responsible for IT within the public sector and each manager having responsibility for an IT investment budget within this sector should be aware of the advantages of open source software.

Indicator 8 By the end of 2003 a software exchange facility will be operational, and in 2004 this facility will be known to >50% of the target group.

Indicator 9 By the end of 2003 one or more licence models regulating intellectual property rights in respect of all software developed on behalf of the public sector will be available.

Indicator 10 In 2004 a test environment will be arranged where practical knowledge can be gained of the existing open source software.

Indicator 11 In the first quarter of 2004 a study of the consequences of the total cost of ownership for the Dutch public sector will be completed.

Indicator 12 In 2005 at least two reference implementations will be available.

Indicator 13 By the end of 2005 courses for training in the management and maintenance of open source software will be available at more than one training institute.

6.3 Measurement

In order to measure whether and to what extent the above objectives are actually achieved, a zero measurement will be carried out for indicators 1 and 7 at the start of the Programme and a final measurement at the end of 2004.

7 Relationship and cooperation with other initiatives

7.1 Open standards

7.1.1 Overview

The following organisations are actively involved in standardisation in the Netherlands. The great majority of these organisations have been established by the public sector:

1. NICTIZ
2. Basic Data Streamlining Programme (SBG)
3. Electronic Municipality Programme (eGEM)
4. Electronic Provinces Programme (PEP)
5. Management Council (Police)
6. Kennisnet Foundation and ICT at School Foundation
7. KIBO Programme
8. Netherlands Standardisation Institute (NEN)
9. ECP.NL
10. ICT and Administrative Assistance Programme

Projects in which standardisation plays an important role have also been established within government ministries. For example, several ministries are cooperating on a project established on the initiative of the IOS Directorate of the Ministry of the Interior and Kingdom Relations to define the interoperability architecture for e-government.

The following international organisations are also relevant to the Programme:

1. World Wide Web Consortium (W3C)
2. Internet Engineering Task Force (IETF)
3. Interchange of Data between Administrations (IDA, part of the European Commission)
4. UK government: e-Envoy
5. OASIS, in particular the e-Government Technical Committee

This list of organisations is not exhaustive, and merely indicates those that were already clearly known during the planning stage to have things in common with the Programme. The partnership relationship with a number of organisations is elaborated in the following sections. The cooperation and coordination will be specified after the start of the Programme.

7.1.2 BZK/DIOS Project: Interoperability architecture e-Government

A project to develop reference architecture for e-government (in close cooperation with a broad group of representatives of the Dutch public sector) has been started by the Ministry of the Interior and Kingdom Relations. The aim of the reference architecture is to establish and disseminate a

shared vision of the configuration of e-government.

The emphasis is on the development of architecture comprehensible to a large target group, in which the coherence of the development is outlined. The reference architecture must elaborate the e-government structure in such a way as to produce a specific vision of the technical architecture. The architecture should have a scope of at least three years.

The first stage of the project will be to develop integration architecture designed to achieve interoperability of the information systems and the exchange of data between government ministries. The integration architecture spans the existing architectures within the ministries. Improvement of the exchange of information between applications can help to improve the interoperability between sub-processes. This minimal form of integration is described as 'linking', and the architecture is known as 'integration architecture'. If it proves possible in this way to 'link' organisations and parts of organisations within the public sector and also to 'link' the public sector with citizens and businesses, cooperation and coherence will be improved. However, 'linking' alone will prove to be insufficient for certain processes in due course. After 'linking' has been established, it will also become possible to redesign specific processes and organisational structures making use of the improved scope of interoperability. The targeted use of redesign and the efforts to achieve uniformity (standardisation) will gradually help to bring about a more complete configuration of integration architecture at all levels, which is more than mere 'linking'.

The integration architecture will be completed in the last quarter of 2002. The project recognises that architecture development requires the establishment of a continuous process. Substantive coordination, cooperation between different parties having different interests and the development of a common reference framework are preconditions for success.

Interfaces with OSSOS

Integration architecture defines, among other things, the standards by which systems should be linked. Naturally, the standards should be open standards. Here there is an express interface with the OSSOS Programme. One of the Programme's most tangible results is the establishment of a catalogue of open standards. This catalogue indicates what open standards are recommended for use within the public sector. The integration architecture also makes statements about the open standards to be used.

It is proposed that the OSSOS Programme should play two roles in the cooperation with the project:

1. providing advice on open standards: the Programme will advise the project by contributing its knowledge and experience concerning the question of what standards are available, what international developments are relevant and the practical advantages and disadvantages in relation to implementation.
2. managing and disseminating the chosen standards by means of the recommended open standards in the catalogue.

The process of establishing a catalogue of recommended open standards involves intensive cooperation and coordination with organisations which are already playing a role in the field of

standardisation for a particular sector.

7.1.3 NICTIZ

NICTIZ is the National ICT Institute for the Care Sector. As an altruistic and neutral organisation, NICTIZ supports the establishment of a better system for the provision of information for and about patients/clients using ICT. The aim is to enhance the quality and efficiency of the care.

An operational and nationwide ICT structure should be established in the care sector as quickly as possible. This structure should make it possible to exchange (standardised) messages about the substance of care and about logistical and administrative matters within the entire care field. The subject has been accorded high priority by the patients' organisations, the care providers, the insurers and the politicians.

NICTIZ focuses on surmounting a number of obstacles to the achievement of the ultimate goal. These obstacles are:

- the absence of suitable ICT infrastructure means that coordinated action is necessary; the problems to be solved included the unique identification of the patient/client, care provider and care insurer, the routing of information over the network, security and access to electronic data;
- it is difficult to link together the numerous information systems in the care sector; the interoperability of these systems should be achieved in both a technical and a substantive sense;
- ICT initiatives addressing issues connected with ICT infrastructure and interoperability are under way in many regions both in the Netherlands and abroad; lack of information about the work being undertaken and about the results of the many projects mean that the wheel is constantly being reinvented; it is of great importance for those concerned that access should be provided to the results.

7.1.4 Basic Data Streamlining Programme (SBG)

The aim of the Basic Data Streamlining (SBG) Programme is boost the measures to streamline the large number of government databases by assisting the various parts of the public sector in establishing a system for the authentic registration of such data in order to bring about a structural improvement in the management of data by government. For this purpose, basic data (about persons, businesses, land registry particulars, topography and addresses) should be recorded at a single place in order to improve the quality of the data and to avoid the necessity of needlessly supplying the same information time and again.

Interfaces with OSSOS

The SBG programme does not set out to makes statements about what data should be recorded in, supplied to or requested from an authentic register. It goes without saying that there would be

advantages to standardising this exchange of data. The OSSOS Programme is willing and able to assist the managers of the authentic registers in choosing and implementing open standards. In the case of some registers there may also be advantages to providing consultation software in the form of modules on OSS conditions. The customer organisations can then integrate these modules directly into their own systems.

OASIS / e-Government TC

OASIS is an international organisation whose mission is to promote and encourage the use and acceptance of structured information standards for e-business. It produces standards in such fields as security, XML, biometrics, business transactions (ebXML[12]), electronic publishing and interoperability between marketplaces. OASIS recently established a new Technical Committee (TC) for government bodies. The aim is to channel the wishes and requirements of government bodies with regard to XML-based standards to the appropriate TCs. It also endeavours to promote the exchange of experiences and encourage the use of open standards developed within OASIS.

Interfaces with OSSOS

The Programme will take part in this forum of OASIS in order to be able to gain international knowledge and experience which can be shared with the members of its target group.

7.2 Open source software

7.2.1 Overview

Several organisations are active in the field of open source software in the Netherlands. Some of them focus on disseminating open source software through the Internet, for example by operating websites in which existing open source applications are classified. These are:

1. Kennisnet Foundation
2. ICT at School Foundation
3. Defence Telematics Organisation (DTO)
4. OASE programme (implemented by Syntens)
5. opensource.pagina.nl

The following organisations are among those active abroad:

1. Open Source Initiative (www.osi.org)
2. Free Software Foundation
3. The GNU project
4. SourceFourge.net
5. BerliOS.de
6. Freshmeat.net

[12] ebXML is a collection of XML-based standards for electronic business transactions.

7. OSDir.com

The above list of organisations is not exhaustive, but simply provides a summary of those that were already clearly known during the planning stage to have things in common with the Programme. The Programme will certainly cooperate closely with the Kennisnet and ICT at School Foundations. The details of the cooperation and coordination will be finalised after the start of the Programme.

8 Finances

8.1 Budget (abridged)

The Programme's budget is shown below.

Begroting programma OSSOS

	2003 totaal	2004 totaal	2005 totaal
Algemeen	€ 596.044	€ 536.044	€ 586.044
Actielijn Open standaarden	€ 178.321	€ 157.553	€ 157.553
Uitdragen kennis en ervaring open standaarden	€ 40.172	€ 30.172	€ 30.172
Afstemming internationaal	€ 11.542	€ 11.542	€ 11.542
Catalogus met aanbevolen standaarden	€ 73.085	€ 73.085	€ 73.085
Ondersteuning bij ontwikkeling en toepassing OS	€ 53.521	€ 42.754	€ 42.754
Actielijn Open Source	€ 429.423	€ 206.328	€ 220.367
Uitdragen kennis en ervaring OSS	€ 49.986	€ 74.613	€ 64.613
Onderzoek Total Cost of Ownership	€ 92.979	€ -	€ -
Referentie-implementaties	€ -	€ 100.000	€ 100.000
Software uitwisselplatform	€ 106.314	€ 21.356	€ 21.356
Ontwikkelen intellectueel eigendoms regime	€ 180.144	€ 10.359	€ 20.359
Ondersteunen voorbeeld projecten	€ -	€ -	€ -
Initieren opleidingen	€ -	€ -	€ 6.542
Certificering	€ -	€ -	€ 7.497
TOTAAL GENERAAL	€ 1.203.788	€ 899.925	€ 963.964

OSSOS Budget Programme

total total total

General

Open Standards line of action

- dissemination knowledge/experience open standards
- international coordination
- catalogue recommended standards
- support in development/application open standards

Open Source line of action

- dissemination OSS knowledge/experience
- research total cost of ownership
- reference implementations
- software exchange platform
- support with model projects
- initiate training courses
- certification

GENERAL TOTAL

The budget distinguishes between out-of-pocket costs and personnel establishment costs. The personnel costs are calculated on the basis of the hourly rates of the ICTU. All out-of-pocket costs are inclusive of VAT, with the exception of the office costs of the ICTU. The office costs are

calculated by reference to the number of workplaces used (8).

The detailed budget is enclosed as Annex B.

8.2 Funding

The total funding requirement for the OSSOS Programme is € 3,067,677. € 839,000 of this amount consists of out-of-pocket expenses (incl. ICTU office costs) and € 2,228,677 is for personnel establishment costs.

Use will be made of several financing sources to fund the OSSOS Programme. These are:

1. NAP fund
2. bridging credit provided by the Ministry of the Interior and Kingdom Relations
3. secondment of staff from central government, provinces and municipalities.

8.2.1 NAP fund

An application for the funding of the Programme is being submitted to the National Action Programme on Electronic Super Highways (NAP). The requested budget is € 2,000,000
A definite decision on the funding is not expected until 2003.

8.2.2 BZK bridging loan

The Ministry of the Interior and Kingdom Relations (BZK) has made available a loan of € 200,000 in order to bridge the start-up period of the Programme until NAP funding has been obtained. This loan should be repaid from the NAP funds as soon as they become available.

8.2.3 Secondment

Staff from public sector organisations wishing to participate in the Programme will be used to carry out various activities. This form of funding is of great importance to the success of the Programme. The staff who participate in the Programme in this way will also serve as a channel for communication with the rest of the public sector. This can strengthen the effectiveness of the Programme in brokering knowledge and experience. The secondment staff will be able to carry out part of their work from their own workplace, but will also be required to be present regularly at the premises of the Programme Office at the ICTU.

€ 1,000,000 of the financing requirement should be covered by means of secondment.

The following positions (for men or women) are available for secondment:

- communication employee (0.7 FTE for 3 years)
- open standards consultant (0.6 FTE for 3 years)
- open standards employee (0.7 FTE for 3 years)
- employee for configuration of interoperability test environment (0.6 FTE for 2 years)

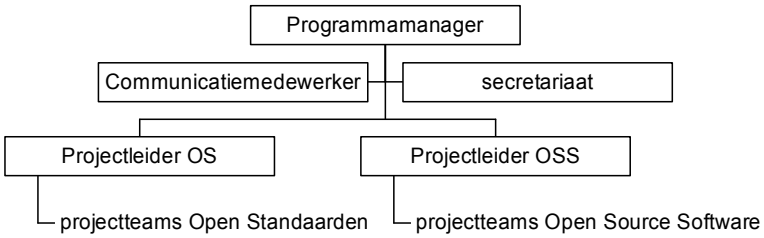
- secretary for preparation of open standards catalogue (0.4 FTE for 3 years)
- employee for development and sharing of knowledge on OSS and maintenance of international contacts (0.6 FTE for 3 years)
- consultant for total cost of ownership research (0.6 FTE for 1 year)
- designers and builders of software exchange web site (1.2 FTE for 1 year)
- editor/moderator for software exchange website (0.5 FTE for 3 years)
- consultant for preliminary research and preparation of licence model (1 FTE for 1 year)
- legal support for preparation of licence model (0.4 FTE for 1year)

N.B. Positions for more than one year can be held by more than one person.

9 Organisation

9.1 Structure

The form in which the Programme is organised is derived from its aims and activities. This translates into a very small core team, to which staff can be added on a project basis. These projects are related to the activities described in chapter 5.



Programme Manager

Communication Officer

Secretariat

OS Project Manager

OSS Project Manager

Open Standards project teams

Open Source Software project team

Programme manager

The Programme is led by a permanent programme manager. He or she is responsible for achieving the aims of the Programme. The programme manager reports on the progress of the Programme to the commissioning ministries. He or she determines the priorities for the Programme in response to policy, social and political developments and controls the contributions made by the staff of the Programme. The programme manager represents the Programme to the outside world.

Project managers

The core team of the Programme consists of two project managers: one responsible for open standards and the other for open source software. They control the projects within the respective lines of action and are themselves active in some of the projects, for example as external consultant. The decision to appoint a project manager to each of the two lines of action of the Programme was taken deliberately because the coherence of the subject matter within a line of action is greater than that between the subject matter of the two lines of action. The possible disadvantage of this arrangement (i.e. that two separate programmes are established within the OSSOS Programme) is neutralised by the fact that coordination and control is exercised by the Programme Manager.

Communication

The Programme has a permanent communication officer responsible for external communication. This person is responsible for drawing up the communication plan and external messages, website configuration, supervising external parties (designers, printers etc) and so forth. The communication officer works for both lines of action.

Project teams

Sub-projects will be defined for the majority of activities. The basic premise is a small organisation which draws as far as possible on the services of public sector employees. The staffing of these projects will be regulated by ICTU (in so far as candidates are suitable) and by means of secondment from public sector organisations. Only in specific fields where specific expertise is required and this is not available at ICTU or elsewhere will use be made of external staff.

Use will be made of *virtual project teams* for a number of activities such as Facilitating the exchange of software (5.3.4). Persons will take part in this activity on the basis of secondment from a public sector organisation and/or on a voluntary basis.

9.2 Term

The programme lasts for a term of 3 years.

9.3 Management

9.3.1 Customer

The programme is being implemented by the ICTU on behalf of the Ministry of the Interior and Kingdom Relations and the Ministry of Economic Affairs. The programme has been commissioned on behalf of these ministries by the DIOS director and the ICT director respectively. The staff of both these directorates are responsible for the day-to-day supervision of and coordination with the programme manager.

9.3.2 Contractor

The director of the ICTU (Siep Eilander) acts as the formal customer on its behalf. Day-to-day implementation is delegated to the programme manager.

9.3.3 Steering group

It is recommended that no specific steering group for the programme be established. In the case of specific subjects, where interdepartmental or government-wide coordination and decisions are necessary, the ICT Council can act as a steering group in respect of open standards and open source software as a means of policy, and the RWTI Sub-Council can act in cases involving open

standards and open source software as an object of policy.

9.3.4 Position within the ICTU organisation

The Programme will be carried out in one of the three circles within the ICTU. Each circle represents a number of programmes. The management team of ICTU consists of Siep Eilander (director), the auditor, the lawyer and three programme managers, each of whom represents a circle.

The different programmes will be coordinated in the programme manager's meetings. In addition the programme manager will have bilateral contacts with the programme managers of other relevant programmes (see also chapter 7).

The ICTU organisation arranges not only the provision of support services for the programme but also personnel affairs, planning & control, legal support, secretarial work, accommodation and IT.

9.4 Personnel establishment

The personnel establishment of the Programme will consist of 10.3 FTEs in the first year, 8 FTEs in 2004 and 8.3 FTEs in 2005, as shown in the following table.

	Programmamanager	Projectleider	Consultant	Medewerker	Communicatie medewerker	Secretaresse	Juridische ondersteuning	
2003	1,0	1,6	3,4	1,8	0,7	1,4	0,4	**10,3**
2004	1,0	1,6	1,0	2,2	0,9	1,4		**8,0**
2005	1,0	1,6	1,1	2,4	0,9	1,4		**8,3**

A Annex: List of interviewed persons

Theus van der Plaat	Defence Telematics Organisation
Rob Rapmund	Kennisnet (director of Technology)
Rob van Ingen	ICT at School
Peter Branger / Gerard van der Hoorn	NICTIZ
Rene Brozius	Ministry of Justice
Boris Dijkmans	Ministry of Finance
Frank Roos, Dick Broekhuis	World Wide Web Consortium (W3C)
Johannes van Veen	Union of Netherlands Municipalities
Jan Rietveld	Netherlands Standardisation Institute
Udo Pijpker	ICTU / SBG
Dymphna van Beek	BZK / DIOS (Super pilots)
Joris Vijverberg	Ministry of Finance (core finance module)
Roy Tomeij	Roy Tomeij bv.
Theo Prangsma	Province of Overijssel
Cees Meesters	Ministry of the Interior and Kingdom Relations / BPR
Carlos dos Santos	OASE project manager
Gera Pronk, Rob Vens	ITO
Jan Moelker	Ministry of the Interior and Kingdom Relations
Alex de Jonge, Edwin Haaring	Ministry of Foreign Affairs