

**SIXTH FRAMEWORK PROGRAMME
PRIORITY 2
INFORMATION SOCIETY TECHNOLOGIES**



FLOSSWORLD

**Free/Libre and Open Source Software: Worldwide
Impact Study**



D21: Track 3 Survey Report – South Africa

eGovernment Study

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Authors:

Pumeza Ceza (CSIR)

Rishab A. Ghosh (MERIT)

Rüdiger Glott (MERIT)

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1. Introduction

This deliverable provides an overview of the methodology and samples of FLOSSWORLD Track 3 (eGovernment survey) in South Africa. The objectives of Track 3 are to reveal

- what policies and behaviour do governments around the world adopt towards FLOSS, open standards and interoperability?
- attitudes towards and usage of FLOSS and open standards/interoperability in public authorities at various levels in each target region

FLOSSWORLD Track 3 intends to benefit not only the understanding of the regional partners, but also EU researchers and policy makers who can place their own policies (and results from EU-focused studies – e.g. FLOSSPOLs e-government and skills development surveys) within a global context.

It must be emphasised that FLOSSWorld was not designed in order to provide a statistically representative account of FLOSS-related eGovernment aspects in the scrutinised regions, although in this report, based on the full sample of respondents, we strive to get as much insights in these issues as possible, in a methodologically sound way. FLOSSWORLD primarily aimed to strengthen Europe's leadership in international research in FLOSS and open standards, and to exploit research and policy complementarities to improve international cooperation, by building a global constituency of policymakers and researchers. FLOSSWorld thus contributes to enhancing Europe's leading role in research in the area of FLOSS and strongly embed Europe in a global network of researchers and policy makers, and the business, higher education and developer communities. Finally, another purpose of FLOSSWorld was to enhance the level of global awareness related to FLOSS development and industry, human capacity building, standards and interoperability and e-government issues in the geographical regions covered by the consortium. The project contributed significantly in establishing and /or supporting a stronger, sustainable research community in these regions. The requirements from the data quality regarding proper academic research were therefore of secondary importance. Testing if and under which conditions data can be gathered in these regions and how collaboration between European and local research partners in these regions can be organised was way more important than statistical representativeness. In order to measure the success of Track 3 the consortium defined a threshold of 400 eGovernment institutions across the 8 countries covered by the consortium, regardless of whether or not the data that was collected was representative. It turned however out that the reluctance of government bodies, which could also be observed in European countries, e.g. in the FLOSSPOLs project, was however unexpectedly high in most of the 8 FLOSSWORLD countries. Although all partners undertook a lot of efforts in order to increase the response rate, including telephone calls to representatives of governments and using paper versions of the questionnaire in order to address the target group in a more personal way, asking for official support from ministries, and expanding the survey period until May 2007, the consortium could not achieve more than 306 responses in total, of which 9 are from South Africa.¹

¹ One reason for the comparably low response is survey fatigue because in some countries, such as South Africa and South Africa, national research institutions have carried out similar surveys across the same target group shortly before the FLOSSWORLD survey was carried out.

2. Design and Methodology

The FLOSSWorld project has been designed with a clearly defined work structure in mind, with two chronological phases and three functional tracks. The two chronological phases of the workplan are designed to reflect both the two structural phases of the thematic studies of Tracks 1 to 3, as well as the increasing levels of collaboration during the project lifetime.

Phase 1, “Design and implementation” focuses on the design and implementation of the studies, with workshops² bringing together researchers with representatives of business, education and policy communities. Phase 2, “Analysis and policy” focuses on the interpretation of survey results, further analysis and inputs to the policy development process. Workshops bring together researchers and policy makers, with strong representation from business as well as the education sector. Table 1 illustrates how Track 3 is structured along the two phases:

	Phase 1: Design, Implementation	Phase 2: Analysis, Policy
Track 3: study of government usage/attitudes to FLOSS and open standards/ interoperability	Plan analytical framework. Finalise design and methodology of survey and questionnaire (based on results of on-going FLOSSPOLS survey). Define representative sample for government respondents. Localise questionnaire. Conduct pre-testing of questionnaire. Conduct survey.	Interpret survey results. Determine extent of and reasons for/against use of FLOSS in govt. Compare by region and with Europe (FLOSSPOLS). Determine possible impact on policy.

Table 1: Design of Track 3

² The workshops held in the course of the FLOSSWORLD project are described in Deliverables D3, D4, and D33-D44.

The questionnaires for the empirical surveys were developed by the European partner (MERIT) while the local partners localised and adapted the surveys to the context of each target country – South Africa, South Africa, Bulgaria, China, Croatia, South Africa, South Africa and South Africa. Localisation involved three tasks:

1. translation of the questionnaire into local languages if and where appropriate (Bulgarian, Chinese, Spanish, Portuguese, etc...)
2. introduction of local terms to ensure international comparability – e.g. using local currencies in the questionnaire and localised scales when asking about income or expenditure levels
3. introduction of additional questions that are unique to each country's context (e.g. questions on the role of specific government organisations, businesses, HEIs or projects, which were carefully designed and positioned so that they did not reduce the international comparability of the rest of the questionnaire)

The surveys were conducted using a combination of web-based questionnaires, e-mail contacts and reminders, telephone and fax. The localised questionnaires were converted into an on-line form and hosted on a web server at UM.

The on-line questionnaires were accessible in two ways: *addressed access*, where unique web addresses were generated for each preselected respondent with identifying information pre-recorded; and *open access*, where respondents have been asked to provide contact information. Addressed access was used in particular when address lists for the respondents were available to the international partners, from which a sample could be drawn. Those respondents that were addressed personally were contacted by e-mail with a request to fill out the survey at the unique address created for them. This is the most reliable form of ensuring an authenticated representative sample of respondents. Open access was used when no respondents could be identified in advance or when the number of identifiable persons to survey was considered too low. For open access, the survey was publicised through mailing lists, online forums, or publicity to associations (of businesses, universities and governments, respectively).

Addressed access execution involved repeated reminders. These were mainly sent by email, but in some countries (South Africa, Bulgaria) it turned out that phone calls to the addressed respondents were more efficient.

Most of the local partners also used paper versions of the questionnaire that were sent to government bodies in order to increase the response rate.

Based on UM's previous experience (e.g. in the FLOSSPOLs governments survey) the questionnaire was designed in a way that the issues of FLOSS and open standards/interoperability complement each other in a single coherent questionnaire. The coverage in terms of content included:

- Software equipment: what kind of software is used, share of FLOSS, reasons for purchasing decisions and strategy, sources where software is purchased
- Practical aspects: size of purchasing budget, supply and maintenance aspects, practical aspects of software (does it meet the requirements? assessment of usability and interoperability etc.), evaluation of costs of purchasing and maintenance (TCO), general assessment of the functioning of the IT system administrated by the IT managers
- IT managers' knowledge of FLOSS / open standards: Knowledge of differences between and discussions about open and closed source software / standards, familiarity with programs and standards available on the marketplace, evaluation of advantages and disadvantages of proprietary and non-proprietary software and of open and closed standards,

perception of libre software diffusion in recent years and estimation of future trends, used information sources

- Attitude towards / affiliation with FLOSS community, own FLOSS development and participation in the community
- Assessment of need for open standards / FLOSS (expected degree of potential improvements)
- Personal features of IT managers, like age, time being on the job, educational background

3. FLOSS Usage

Overall the share of FLOSS users among government bodies in South Africa is 89%. 88% of the respondents would find it useful to increase the share of FLOSS in their organisation,³ another 12% said that it would not be useful to increase the share of FLOSS in his organisation. 43% of those who find an increase of the share of FLOSS in their institution useful would prefer to replace some proprietary components by FLOSS, 57% wish to replace all proprietary software components. The wish to replace all proprietary software by FLOSS is thus the strongest as compared to the other countries that were surveyed.

As illustrated in Figure 1, the widespread use of FLOSS within government institutions does not go together with a high degree of FLOSS usage. This is especially evident when the share of organisations that use FLOSS exclusively in their IT systems (servers or desktop PCs) is considered. However, none of the governments does not use any FLOSS on servers or desktop PCs.

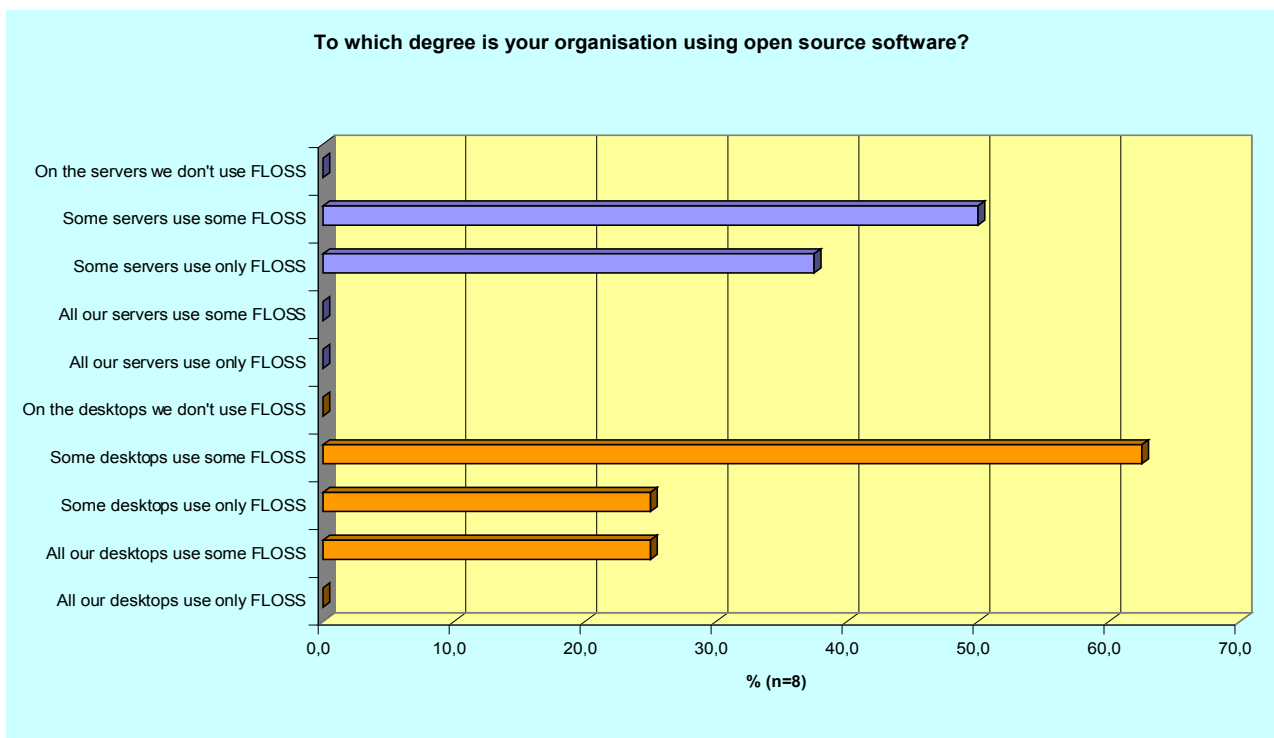


Figure 1: Degree of FLOSS usage on desktop PCs and servers

3 The FLOSSPOLs survey revealed a respective share of 51% for Europe. The difference can be explained by a time effect, since the FLOSSPOLs survey was carried out two years before the FLOSSWORLD survey and the awareness of FLOSS has increased in the meantime.

The FLOSSWORLD Track 3 survey confirmed that across the eight countries that were surveyed Microsoft has still a dominant position in the markets for operating systems, desktop applications, and Internet browsers. This does not hold true for the nine South African governments, as shown in Figure 2. The most important FLOSS systems are OpenOffice.org and MySQL/PostgreSQL.

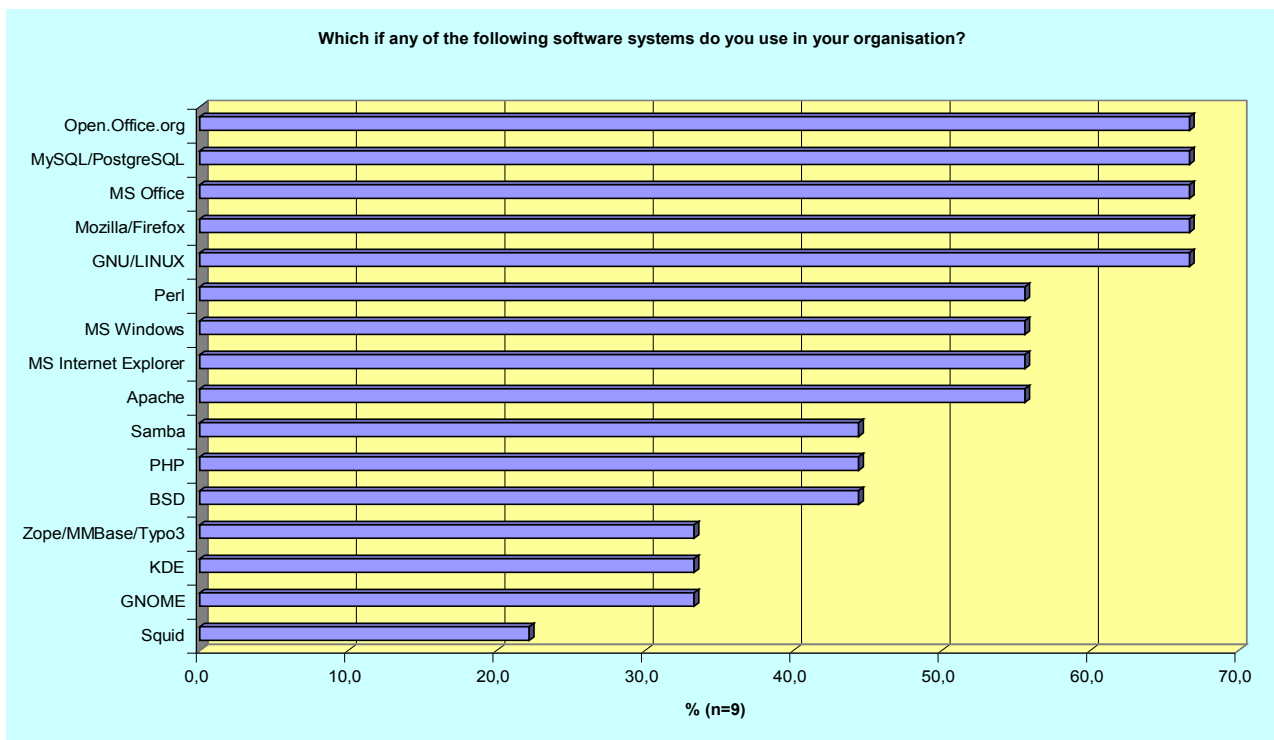


Figure 2: Usage of selected software systems by government bodies

44% of the respondents have directly contributed to a FLOSS project (average: 17%). 11% (average: 8%) have contracted somebody else (i.e. a company or a developer or team of developers) to contribute to a FLOSS project. 33% (average: 23%) own software that might be interesting to be shared with other organisations under a FLOSS license.

4. Attitudes towards FLOSS

Probably the most fundamental characteristic of FLOSS is that the source code can be studied and modified, which provides users with software skills the opportunity to adapt software to their personal needs and preferences and to fix bugs. Overall, two thirds of the respondents say that it would be a substantial improvement for their IT Department to have the freedom to study or modify the source code of the software they use, the respective share of South African governments is 88%.

However, whether or not a government organisation uses FLOSS depends not so much on its actual usefulness and adaptability but on the attitudes of users towards a combination of different advantages and disadvantages that can be attributed to FLOSS - regardless of whether or not this attribution is justified. We therefore offered the respondents a set of 8 statements on pros and cons of FLOSS and asked them to evaluate them on a scale ranging from "I strongly agree" to "I strongly disagree". Table 2 shows the average evaluation (mean value on the scale) of each of these statements per country.

How much do you agree or disagree with the following statements?

	Statement	N	Mean	Std.deviation
P r o s	Open source software is easier to use than proprietary software	8	0,6	1,6
	Open source software is easier to customise than proprietary software.	8	1,8	0,5
	Open source software is more reliable than proprietary software	8	1,3	1,4
	Open source software can very easily be combined with proprietary software within the same IT system.	8	1,5	1,1
C o n s	If Open Source software would only provide access to the source code, but would not be cheaper than proprietary software, my organisation would not use it!	8	0,0	1,7
	It is too hard for my organisation to find companies that provide technical support for open source software.	8	0,4	1,4
	Migrating to open source software makes sense only if other organisations like mine do it first.	8	-1,0	0,5
	Training people in my organisation to use open source software will be too expensive and / or take too much time.	8	-0,5	1,6
* = Mean can range between -2 and 2. Values refer to following scale: 2 = I strongly disagree, -1 = I disagree, 0 = neutral, 1 = I agree, 2 = I strongly agree				

Table 2: Attitudes towards FLOSS

South African governments mainly consider FLOSS to be easier to customise than proprietary software and well combinable with proprietary software. In contrast to respondents from other countries they show also strong agreement with the statement that FLOSS is easier to use than proprietary software. The attitudes towards negative statements on FLOSS are either rejection or neutral.

5. eGovernment and FLOSS

FLOSS in government is not only a relevant issue for technical and economic aspects of IT equipment and administration. Since FLOSS is strongly related to open standards and usually helps to increase interoperability it provides also a valuable means for fundamental eGovernment objectives, such as ease of access to government services or ease of data exchange between public administrations. Overall, 89% of the South African respondents think citizens should be able to access all governments services regardless of the software platform that they use (average: 84%). This opportunity is actually implemented in 63% of the respondents' organisations (average: 68%).

89% respondents think governments should be able to exchange data with other government organisations regardless of the software platform that they use (average: 88%). An actual implementation of this opportunity is reported from 50% of the respondents (average: 55%).

6. FLOSS Policies

We evaluate FLOSS policies within government organisations through examining their purchasing strategies and software-related decision-making, and factors like vendor dependency and budget or personnel constraints.

Whether an organisation purchases software usually with the hardware or separated from it gives some indication of the “software awareness” of this organisation. Taking into account that usually software that is sold together with the hardware is proprietary standard software, the underlying hypothesis is thereby that organisations that tend to purchase their software with the hardware do not care as much about specific software needs of their organisation as organisations that purchase software separated from the hardware. 33% of the respondents purchases software together with the hardware (average: 34%), 45% separated from it (average: 28%), 22% do both to the same degree.

In contrast to the majority of European governments, which preferred to have software that is compatible with other software from different producers (= interoperable software), three quarters of the governments in the eight countries that were surveyed prefer to have software that is compatible with the software they already use in their organisation (= compatible software). The same holds true for the South African sub-sample, though to a higher degree: 89% prefer compatible software and 11% prefer interoperable software.

In 67% of the South African governments the most important person when decisions on software purchases are made is the IT manager (in most cases the person who participated in the survey), which is in line with the average of all respondents from the eight countries that were surveyed.

While the FLOSSPOLs survey on European governments revealed that the feeling of vendor dependence is one of the key drivers of FLOSS usage, the FLOSSWORLD countries are characterised by the opposite, as more than 90% of the FLOSSWORLD survey respondents – and all respondents from South Africa - say they do not feel too dependent on their software vendors. This may have several reasons. For instance, this finding could result from the fact that vendors more or less provide the governments with the software they need without limiting their choice when they decide to use FLOSS, too. Another reason could be that in countries where a contract binds the government organisations to buy proprietary software the governments may feel limited in

their freedom to choose software but they may not relate this to their software vendors.

While the FLOSSPOLs survey showed for European governments that FLOSS usage increases with growing need to customise software after it is purchased the FLOSSWORLD respondents do not differ significantly with regard to customisation needs. 80% - 89% in South Africa - say they have to customise software never or seldom. The same holds true for the need for external maintenance, which we assumed to have a positive impact on the use of FLOSS because it is an expensive service for which money (and probably time) could be saved if the source code was accessible to the IT department personnel. Given the high interest in access to the source code (as described above) this assumption appears reasonable.

Regarding the whole FLOSSWORLD governments sample, the average share of licence fees in the overall IT budget is the same for FLOSS users as for non-users (26%) and has therefore no impact on the extent of FLOSS use. Though there is a significant correlation between the *individual perception* of the share of license fees as “too low”, “reasonable” or “too high” and FLOSS usage, the direction of this interrelation is not straight in the way that those who perceive this share as low or reasonable show small shares of FLOSS usage and those who perceive the share of license fees as too high show high shares of FLOSS users. Given the relatively small numbers of the country-specific sub-samples there is neither any statistically significant impact of these factors on FLOSS usage.

All South African respondents see a need for reducing the expenditure for license fees in their organisations within the next two years (average: 61%).⁴

While the FLOSSPOLs survey revealed for European local governments that the likelihood of FLOSS use increases with growing numbers of PCs and laptops each IT employee in the IT department had to administer, the governments in the countries that were surveyed by the FLOSSWORLD project do not show such a tendency. This result must however be interpreted carefully because the relatively small number of respondents – at the country level – makes the observations subjects to random in this regard. Table 3 shows the respective figures for the South African sub-sample of the FLOSSWORLD governments survey.

4 Considering the whole FLOSSWORLD government survey, this applies to 71% of the FLOSS users but only to 43% of the non-users, which might imply that the use of FLOSS may be depending on the perception of a cost pressure – though this cost pressure remains diffuse, given the fact that budgets and the share of license fees and even the individual perception of this share do not differ between these two groups.

	Total	FLOSS users	Non-users
Number of employees in IT department	726,6	844,3	20,0
Number of PCs and laptops in organisation	1969,0	1678,9	4000,0
Number of servers in organisation	48,5	26,6	158,0
Figures are means			

Table 3: IT department size and number of PCs and servers to administrate

7. Conclusion

Overall the FLOSSWORLD government survey (Track 3) could show that collaboration between EU partners and local partners in developing countries can sustainably be established and results in significant academic research results. A reservation that must be made is that the expected threshold of 400 respondents could not be achieved and that therefore the number of respondents per country is often too small for sound statistical analysis. This applies strongly to South Africa. The results presented in the previous section are therefore rather descriptive than analytical. In this respect, further attempts to survey governments in countries outside Europe should take into consideration that achieving a useful response rate may require more time and efforts than in EU Member States. Extending the survey period and trying to get support from superior government organisation together with personal ways of contacting the target group (telephone calls, letters) turned out to be very effective in some countries (namely India and Malaysia), though these methods did not work in other countries (namely China and South Africa).

Key findings of the South African part of the FLOSSWORLD Track 3 survey are that there is widespread use of FLOSS (though not as widespread as in other countries), aligned with a considerable demand for increasing the share of FLOSS within the government organisations. The wish to replace proprietary software completely by FLOSS is strongest pronounced by the nine South African respondents. Active participation of the government organisations in FLOSS development is very strong. Similar to Europe, FLOSS is usually not a standard application on desktops and servers.

Software policies, as far as they could be pursued by the means of an (online) survey, play an important role for the usage of FLOSS in European governments, but in South Africa (and other developing or transitional countries) basic cornerstones of such policies (need for customisation or maintenance, IT budgets, share of license fees in IT budgets) do not differ between the FLOSS users and non-users that have participated in the survey and therefore these factors have no measurable impact on FLOSS usage.

Finally, while the full sample of FLOSSWORLD Track 3 could show that FLOSS has a positive impact on fundamental eGovernment goals, such as platform independent access for citizens to services and platform independent exchange of data between public administrations, this observation cannot be confirmed at the level of the South African respondents because their number is too small.

Annex A1: Questionnaire

organisation :	Provincial Govt of the Western Cape
name :	
position :	Directors ICT Policy and Strategy
email :	
country :	ZAF

1 / 23. Do you use open source software systems in your organisation?

yes

no

1a / 23. To which degree is your organisation using open source software? (Note: multiple answers are possible)

All our desktops use only FLOSS

All our desktops use some FLOSS

Some desktops use only FLOSS

Some desktops use some FLOSS

On the desktops we do not use FLOSS at all

All our servers use only FLOSS

All our servers use some FLOSS

Some servers use only FLOSS

Some servers use some FLOSS

On the servers we do not use FLOSS at all

1b / 23. Which if any of the following software systems do you use in your organisation?

Apache

BSD

GNOME

GNU/Linux distributions, such as Ubuntu, Debian, Redhat, SuSe, Mandriva,

KDE

Mozilla / Firefox

MS Internet Explorer

MS Office

MS Windows

MySQL / PostgreSQL

OpenOffice.org

Perl

PHP

Samba

1c / 23. Has your organisation ever contributed to a FLOSS project (e.g. by contributing source code) or contracted somebody else to contribute to a FLOSS project?

- no
 - yes, we contributed directly
 - yes, we contracted somebody else to contribute
 - I don't know
-

2 / 23. Does your organisation own software that might be interesting to be shared with other organisations under a FLOSS license?

- yes
 - no
 - I don't know
-

3 / 23. Do you think citizens should be able to access all governments services regardless of the software platform that they use?

- yes
 - no
 - I don't know
-

3a / 23. If answer is yes: Is this opportunity implemented in your organisation, i.e. can citizens access your organisation's services regardless of the software platform that they use?

- yes
 - no
 - I don't know
-

4 / 23. Do you think governments should be able to exchange data with other government organisations regardless of the software platform that they use?

- yes
 - no
 - I don't know
-

4a / 23. If answer is yes: Is this opportunity implemented in your organisation, i.e. can your organisation's data be exchanged with other government organisations regardless of the software platform that they use?

yes

no

I don't know

5 / 23. Which operating systems are the basis of your IT infrastructure?

BEOS

BSD

GNU / Linux

MacOS

NETWARE

SOLARIS

UNIX

Windows 2000

Windows NT

Windows XP

something else, please specify:

I don't know

6 / 23. Would you find it useful to increase the share of open source software in your organisation?

no

yes

At the moment we are experimenting with FLOSS in pilots, after these pilots are completed we will decide whether or not we extend the usage of FLOSS

I don't know

6a / 23. In the long run, would you prefer to replace some proprietary software components by open source software or all proprietary software components by open source software?

to replace SOME components

to replace ALL components

I don't know

7 / 23. What do you think: Would it be a substantial improvement for your IT Department to have the freedom to study or modify the source code of the software you use?

yes

no

I don't know

8 / 23. Please indicate how much you agree or disagree with the following statements.

Open source software is easier to use than proprietary software	I strongly agree I agree no opinion I disagree I strongly disagree
Open source software is easier to customise than proprietary software.	I strongly agree I agree no opinion I disagree I strongly disagree
Open source software is more reliable than proprietary software	I strongly agree I agree no opinion I disagree I strongly disagree
Open source software can very easily be combined with proprietary software within the same IT system.	I strongly agree I agree no opinion I disagree I strongly disagree
If Open Source software would only provide access to the source code, but would not be cheaper than proprietary software, my organisation would not use it!	I strongly agree I agree no opinion I disagree I strongly disagree
It is too hard for my organisation to find companies that provide technical support for open source software.	I strongly agree I agree no opinion I disagree I strongly disagree
Migrating to open source software makes sense only if other organisations like mine do it first.	I strongly agree I agree no opinion I disagree I strongly disagree
Training people in my organisation to use open source software will be too expensive and / or take too much time.	I strongly agree I agree no opinion I disagree I strongly disagree

9 / 23. In general, how do you buy your software?

- together with the hardware
 - separately from the hardware
 - both to the same degree
 - I don't know
-

10 / 23. In general, when you buy new software, what is more important for you?

- That the new software is compatible with software I already use
 - That the new software is compatible with software from different producers
 - I don't know
-

11 / 23. Who is (are) most important for decisions on software purchases in your organisation? Please choose not more than two answers and rank them by a '1' for most important and a '2' for second most important.

- IT Manager (yourself) / Head of IT department
- users
- financial department
- other management
- external consultants
- higher level government organisations
 - Please specify:
 - associations of municipal government organisations (e.g. of cities)
 - regional government
 - associations of regional government organisations
 - central government
 - supranational organisations

- others
 - Please specify
-

12 / 23. How many vendors do you mostly rely on to buy software for your organisation?

- number of vendors
 - I don't know
-

13 / 23. Would you say that your organisation is too dependent on your vendors?

- yes

- no
 - I don't know
-

14 / 23. How often do you have to customise software after you have bought and implemented it in your IT system?

- never
 - sometimes
 - regularly
 - often
 - very often
 - I don't know
-

15 / 53. How often do you use external suppliers for software maintenance?

- never
 - sometimes
 - regularly
 - often
 - very often
 - I don't know
-

16 / 23. Roughly speaking, how large is the IT budget of your organisation in 2005? Please, use ONLY numbers with no other characters (e.g. 10000 for ten thousand).

- I don't know
-

17 / 23. What approximately is the percentage of the share of licence fees for software in your ICT budget?

percentage (numbers):

- I don't know
-

18 / 23. What do you think: Is this share of license fees...

- too low
- reasonable
- too high
- I don't know

19 / 23. Do you see a need for reducing the expenditure for license fees in your organisation within the next two years?

- yes
 - no
 - I don't know
-

20 / 23. How many people work in your IT department?

number of people

- I don't know
-

21 / 23. Approximately, how many PCs (including Laptops) do you have in your organisation?

number of PCs

- I don't know
-

22 / 23. Approximately, how many Servers do you have in your organisation?

number of servers

- I don't know
-

23 / 23. Would you be interested in being informed about the results of our survey?

- yes
- no

Annex A2: Guidelines for Localising the Track 1 Questionnaire

FLOSSWORLD Guidelines for the Governments Survey

The following guideline provides a stepwise instruction for the preparation and execution of the governments survey. It refers to the analytical framework paper and to the revised version of the respective global questionnaire.

- **Check the revised global questionnaire** carefully with regard to understandability of the wording, order of the questions, and completeness of aspects that are surveyed again. Inform MERIT and URJC about changes you want to make and errors.
- **Localise the questionnaire.** As described in the analytical framework paper, localisation means to translate the complete questionnaire into your language, to introduce local terms to ensure international comparability (e.g. using local currencies in the questionnaire and localised scales when asking about income or expenditure levels, but do also localise the FLOSS terminology that we use (e.g. FLOSS, F/OSS, Libre Software, Free Software, Open Source Software, or any other term that you think would be best to use in the region you survey) and the educational degrees and professions) and to add questions that are unique to each country's context. **At the end of this text a separate short list is provided for the questionnaire of the question numbers and points that MUST be localised by ALL FLOSSWORLD PARTNERS.**
- **Prepare the circulation of the questionnaire** (start in parallel to localisation): Figure out how you want the questionnaire to be circulated, this may be dependent on the availability of contact information for government organisations in your country. You can either use databases that contain such information, search the Internet for such organisations and associations of such organisations, use address books, yellow pages, etc. At any rate it would be good if you know a person in the organisations you want to survey who is able to answer our questions (usually the head of the IT department) and to whom we can send the questionnaire. Our experience in Europe is that eliciting such information through phone calls is an extremely hard and time-consuming business. Nevertheless, having a personal contact usually helps considerably to raise the response rate, and you can explain the purpose of the survey and ask for the preferences of the respondents regarding the kind of questionnaire (online, letter, fax). Make as soon as possible a list of all the organisations you want to contact, together with contact information (name of the organisation, name of the contact person, email address(es), and any other information that is relevant for contacting this organisation) and information about their level (local-regional-

central, association of government organisations, etc. - whatever you find useful) and the way how they should be contacted (email, letter, fax, phone, maybe even face to face). Send all these information to MERIT. If you find out that circulating the questionnaire by letter or fax or face to face would be better, you have to collect contact information (telephone or fax numbers or locations / dates for possible face to face interactions) of the persons you want to survey. These lists must be sent to MERIT, too. *Note: The advantage of an online version is that it can be very easily distributed and responded. If you rely on other channels for distributing the questionnaire (i.e. telephone, fax, face to face) you will have to organise the distribution of the questionnaire yourself.*

- **Create different versions of an introductory email or letter/fax** in order to announce the survey and explain its purpose to the government organisations or, if applicable, contact persons in these organisations. This will be done by MERIT and coordinated with you. *You will have to localise the introductory letter and send it back to MERIT.*
- **Send the localised questionnaire to MERIT.** The localised questionnaires will be converted into on-line form and hosted on a web server at UM (in cases where connectivity is an issue, questionnaires can be hosted on local web servers arranged by the international partners). The on-line questionnaires will be accessible in two ways: addressed access, where unique web addresses will be generated for each pre-selected respondent with identifying information pre-recorded; and open access, where respondents may be asked to provide contact information. *The governments survey is intended to use addressed access, but if you see a possibility to get the questionnaire and the introductory letter circulated within the governments organisations of your country in a self-organised way we can also provide open access.* If you want to use letters or faxes, MERIT will create a database that you can access online and in which you can fill in the responses you get.
- **Pre-test preparation and execution:** Select a limited number of developers (usually, 5 respondents suffice for this purpose), for instance IT managers of government organisations on different administrative levels in the area where you live, and let them fill in the questionnaire. If possible, you should try to talk to a couple of the pre-test respondents directly about the questionnaire, this provides you with much deeper insights in how the questionnaire works and how the targeted group of respondents might react than indirect communication. For the pre-test we will need some additional questions on the items listed below. These questions must also be

sent to MERIT in order to include them in the pre-test version of the questionnaire. Answers to the pretest must be treated as normal responses and therefore be submitted to MERIT, if appropriate they will get integrated in the final survey dataset. Extra items the respondents should comment on in the pre-test are:

- understandability of the questions,
 - questions that appear difficult or impossible to answer,
 - questions they did not want to answer,
 - questions (or terms) they find unclear or annoying,
 - the time they needed to complete the questionnaire (in an online version we can monitor this ourselves) and whether or not they find it too time-consuming (ask for the concrete question at which they got the feeling the questionnaire is too long),
 - their general impression of the survey and the questionnaire
 - further comments
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- **Analysis of the pre-test:**Particular attention will be given to any local differences in understanding or answering the localised versions of the questionnaire.
 - **Revision of the questionnaire**(if necessary), including localisation of the new elements and revision of the online version.
 - **Distribution of the final version of the questionnaire together with the introductory letter**to the persons in the address lists that have been collected during step 3. This will be done by MERIT. Depending on which way of distributing the questionnaire you chose the questionnaire will either be sent by email to the persons that you have specified in personalised address lists, providing addressed access to the online questionnaire. If you found a way to distribute the questionnaire in government organisations in a self-controlled way open access to the questionnaire will also be provided. In this case the respondents will have to specify the name of their organisation and some other relevant information that otherwise would have been collected in step 3. (Note: A combination of addressed and open access to the questionnaire is generally possible). In case of addressed access, MERIT will attribute each personal record with a personal password that will be used in the introductory email to allow respondents to access their personal version of the online questionnaire (i.e. nobody else will be able to see what they reply). If you prefer to distribute the questionnaire by fax or by letter these paper versions must be distributed by you and the completed questionnaires must be returned to you, too. In case of letter

questionnaires we recommend strongly to use pre-paid response envelopes with your address, as this eases the respondents to reply and raises the response rate.

- **Data collection:**

- For online survey with addressed access to the online questionnaire: Respondents will access the online questionnaire and authenticate by entering their personal password, then they will complete the questionnaire. The responses will automatically be transferred into a password-protected database that can be accessed by you online. After a specified period of time (i.e. one week after distributing the questionnaire), those who did not reply will get a reminder by email. We usually send 3-4 email reminders and then make a final reminder phone call before we close the survey.
- For online survey with open access to the online questionnaire: Respondents will fill out the questionnaires directly on the website, the responses will automatically be transferred into a password-protected database that can be accessed by you online. Reminders cannot be used because we have no contact information.
- For letter or fax survey: The respondents will send you back the completed questionnaires. You will have to access the password-protected database that is provided online by MERIT and to enter the responses manually in this database. You will also be responsible for sending reminder letters and faxes. At any rate, you should calculate a longer survey period for letter and fax surveys than for the online survey (at least double the time).
- For face to face interviews / meetings: Either use a computer to have the interviewee fill out the questionnaire online, or fill out a paper version of the questionnaire which you will then provide in electronic form to MERIT as with the letter survey described above. Since you meet the respondent personally there's no need for reminders.

- **Non-response analysis:** Not all of the contacts you have collected for the lists will reply. The crucial question for the validity of our results is whether our respondents differ significantly from our respondents in one or more respects. If this is the case our sample would be biased towards this or these characteristics, for instance towards FLOSS users. In order to estimate whether such (a) bias(es) exist(s) we have to conduct a non-response analysis. This means that we have to contact the non-respondents (or a sub-sample of them) again after the survey is

closed and to ask them a couple (2-4) of relevant questions that allow comparing the non respondents and the respondents with regard to characteristics that are important for the survey. For instance, FLOSS usage, size of the organisation, and level of the organisation could be such important criteria. The small questionnaire for the non-response analysis will be created in collaboration of all consortium partners, the execution of the non-response survey will fall into the responsibility of the local partners. The results of the non-response survey must be sent to MERIT and will be analysed and compared there.

- **Shortlist of question numbers and points in the questionnaire that must be localised by all local partners:**
 - FLOSS terminology (i.e. FLOSS, F/OSS, Open Source Software, etc.), see for instance question 1
 - Question 1b: list of software systems
 - Question 8: different meaning of license fees for purchase decisions in different countries
 - Question 9: different meaning of compatibility and interoperability in different countries
 - Question 10: different meaning of license fees for purchase decisions in different countries
 - Question 15: currency
 - Question 16: different meaning of license fees for budgets in different countries
 - Question 17: different meaning of license fees for budgets in different countries