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Inception Report

for

Cadastre & Registration FLOSS Project

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Contents

1 Introduction

1.1 Purpose and Scope of this Document

The purpose of this document is to refine the Project Document (for the project "Support to the Development and Piloting of an Open Source Cadastre and Registration Shell") and in this process to define a work plan for the remainder of 2010.

This document includes the following sections:

- **Refinements to Project Document** where new activities and issues are identified or previously described activities or issues are amended to reflect current understandings
- **Roles and Responsibilities** where the different groups and individuals involved in this project are identified and their roles outlined;
- Significant **Risks and Proposed Mitigation Strategies** are identified;
- **Project Work Plan** is outlined

The information used in the preparation of this document has been gathered through:

- Review of the Project Document and the Feasibility Study reports for the 3 proposed pilot implementations (Ghana, Nepal and Samoa);
- Discussions with FAO NRC staff involved in the design of the project

This information was gathered between 7 June - 9 July 2010.

1.2 References

Title	Date / Version	Prepared by
Project Document, Support to the Development and Piloting of an Open Source Cadastre and Registration (OSCAR) Shell	October 7, 2009	NRC, FAO, Rome
OSCAR Project Report – Ghana	September 10, 2009	Professor G. Brent Hall, Benjamin Armah Quaye & Foster Kwame Mensah
Feasibility Study for the OSCAR Pilot in Nepal	October 10, 2009 / Final	Neil Pullar
Feasibility Study for the OSCAR Pilot in Samoa	October 10, 2009 / Final	Neil Pullar

2 Proposed Refinements to Terms of Reference

2.1 Project Start Date

The actual project start date is June 2010 a six month delay on the proposed project start date as stated in the project document. The project Gantt Chart and the work plan for 2010 has been prepared to reflect the actual project start date (refer to Section 5).

2.2 Requirements Workshop

The project document refers to a "2-day Expert Group Meeting"at FAO Rome early within the project. This meeting will be a workshop where participants from the pilot countries will meet to finalise the requirements for the initial generic OSCAR / FLOSS software. The definition of these generic software requirements will allow each country to identify which of their specific requirements are not met by the initial generic software and hence what will be the customization and extensions to the initial generic software that will be required to be completed in the software development effort in their country in the second stage of software development.

2.3 Study Tour

The purpose of the study tour will be to allow representatives from each pilot country to observe a modern cadastre and registration computerized system, how it supports the cadastre and registration business processes, the services that such a system provides and to talk to counterparts within the host agency (the Finnish National Land Survey) who have been through the system development and system implementation. Ideally the study tour should be scheduled to occur immediately before the Requirements Workshop to minimize travel costs and provide study tour participants with ideas as to how their home systems could be improved through the OSCAR / FLOSS software implementation in their country.

2.4 Additional Pilot Implementations

There has been some interest from other FAO member countries in participating in the OSCAR / FLOSS project. Because the aim of the project is to have an active user and developer community, the more countries involved in this initiative, the better. However, there are cost implications with the involvement of more countries and additional funding would need to be found. Requests to consider the inclusion of further countries will need to come from the respective FAO Country Representative who will also need to find sufficient funding to cover the cost of a 2-3 week consultancy to prepare a feasibility study. Such a feasibility study should follow the scope of those prepared for the initial 3 pilot countries (Samoa, Nepal and Ghana) and the format of these studies should be similar to the Nepal and Samoa feasibility studies. An additional topic to be covered in these new feasibility studies will be to identify funding sources .

2.5 Developer Roles

Although the project document referred to the need for a 3 person "International " development team comprising of GIS Programmers and a Database Designer, it has been decided to focus more on general software design and development skills. GIS functionality will be required but most of the required functionality will not require GIS functionality. The team is small and so generalist software developers will provide for a more flexible team. One member of the team will be required to assist the project coordinator with the software design effort and, in addition, to provide technical leadership to the other developers and take on software development work in their own right. The software designer will be recruited earlier than the software developers.

Once the initial generic software has been completed by this Rome based software development team, it is planned that these developers will be offered the opportunity to relocate to pilot countries where they will

help to establish and support the work of local software development teams that will customize the OSCAR / FLOSS software for use in those countries. The local software development teams will also take on the software support function in each of those countries.

2.6 Short Term Consultancies

The project document and budget makes provision for a number of short term consultancies, particularly in the early stages of the project. These consultancies are likely to include:

1. OSCAR Software Architecture Specification
2. Statement of Requirements for initial generic OSCAR software (based on feasibility study statement of requirements)
3. Quality Assurance Plan
4. Quality Assurance reviews of project

2.7 Academic Partner (Tampere University of Technology)

A relationship has been established with a Finnish university, the Tampere University of Technology because of their strong background in open source software development. Initially the university will provide assistance in establishing an open source software development environment for the FAO software development team including open source project registration and establishing appropriate mechanisms to encourage the growth of an active user open source developers community dealing with cadastre and registration software. Later as the software development effort gets underway, peer review of the software code the FAO software development team produces and possibly a wider and regular quality assurance review of the project as a whole are roles that could be taken on by the university. The practicalities of the university becoming involved in some software development work will also be explored.

2.8 Project Structure

Initially a simple structure will be implemented with the FAO Project Coordinator responsible for the day to day operation of the Rome-based software development team, any short term consultancies, liaison with the pilot countries and the arrangements for the study tour and the Requirements workshop. The FAO Project Coordinator will report to Principal Officer (NRC) on a monthly basis on progress with a copy of the progress report also being forwarded to NRC and other FAO staff who have expressed an interest in the project. On workshops and the presentation of significant reports, this same circle of FAO staff should be invited to comment and, where appropriate, attend the presentation or workshop.

2.9 Reporting

As previously mentioned, the FAO Project Coordinator will provide the Principal Officer (NRC) with a monthly progress report. Both quarterly and annual reports will be required primarily for the donor.

Other reports are identified in the following table:

Report	Project Document Delivery Date	Proposed Delivery Date	Notes
Inception Report (including 2010 Work Plan)	Not specified	30 June 2010	
Quality Assurance Plan	Not specified	1 January 2011	
Statement of Requirements for the initial generic	Month 3	30 November 2010	

Report	Project Document Delivery Date	Proposed Delivery Date	Notes
OSCAR / FLOSS software			
Software Architecture Document for the initial generic OSCAR / FLOSS software	Not specified	14 February 2011	
Quarterly Reports	Month 3 etc		
Annual Reports	Month 12 etc	1 June	
OSCAR / FLOSS User Manual (for the initial generic software)	Month 21	April 2011	
Training Plan	Month 21	April 2011	
Online Community Building Plan	Month 30	January 2013	
Software Support and Maintenance Plan	Month 27	October 2012	
Final Project Report	Month 36	June 2013	

3 Risks & Mitigating Actions

There are a number of risks impacting on the successful conclusion of this project. The most significant of these risks were identified in the project document and are expanded and updated in the following table:

Risk	Impact	Probability	Mitigation
1. Insufficient or reduced government support within pilot countries during the timespan of the project to ensure the successful implementation of OSCAR / FLOSS software	Scope of the pilot effort will be limited and so the OSCAR / FLOSS software will not be fully tested and/or the implementation of OSCAR / FLOSS software will not be implemented comprehensively within a pilot country following the pilot	Low	• At the beginning of the project memoranda of understanding will be prepared for signing by each pilot country which clearly states the expected roles and contributions of both FAO and the pilot country • At the beginning of the project a work plan will be prepared and this work plan will be revised each year • Early in the project a series of workshops across all pilot countries will be held to explain roles and responsibilities within the project and to plan together the first stage of the project
2. Digital cadastre and registration data is not available from existing computerised systems	This would impede the customisation of the software and adaptation to local needs	Low	• The requirements and preconditions for development of the OSCAR / FLOSS software must be clear to stakeholders in all the pilot countries at the start of the project • Where digital cadastre and registration data is not available the customisation of the OSCAR / FLOSS software may need to be focussed on the requirement to capture and maintain the digital data (and delaying the requirements to comprehensively support cadastre and registration business processes) • Where there are different organisations associated with cadastre and registration business processes and a reluctance to provide digital data by one of these organisations, the scope of the customisation of the OSCAR / FLOSS should be limited to the functions undertaken by the participating organisation and an interface designed where there are data interactions with the other organisations

Risk	Impact	Probability	Mitigation
3. Local cadastre and registration requirements in pilot countries are not well defined and documented	This would result in a system that is insufficiently adapted to local needs	Low	• International (FAO software development) and local (customisation and support) software developers must work together closely • Adequate time and effort is planned for the identification of local requirements in each of the pilot countries at the beginning of the customisation of the initial generic OSCAR / FLOSS software • Pilot countries must show a willingness to modernize their cadastre and registration systems including making changes to current legal and administrative practices associated with cadastre and registration
4. Too much effort is required for the initial generic software to be customised for use in specific countries	Not many countries decide to implement the OSCAR / FLOSS software	Low	• The implementation in at least three countries will force developers to focus on common aspects of the OSCAR / FLOSS software as well as ensuring the software is relatively easy to customise to the specific needs of countries wanting to implement OSCAR / FLOSS • The adoption of software development standards by both the FAO software development team and the customisation software development teams in the pilot countries • The adoption of a standard data model for all countries implementing OSCAR / FLOSS, Open GIS Consortium Simple Feature Type spatial data definitions and the use of a similar, if not identical, database schema and software architecture
5. Local software developers in the pilot countries do not have sufficient technical capacities to maintain the OSCAR / FLOSS software as customised for use in their country or these software developers	This would result in a system that cannot be maintained by local experts beyond the end of the project, creating a dependency on international experts and rendering the project unsustainable.	Medium/ High	• Local IT experts with sufficient programming experience and knowledge on OSS products must be recruited and trained until they are able to maintain the system independently • Implementing agencies in the pilot countries must commit to finding regular budget funding to cover the cost of software support staff salaries

Risk	Impact	Probability	Mitigation
leave when trained			by the end of the project • FAO to investigate extending the period of software support beyond the project
6. OSGeo (a platform for Open Source GIS related software projects) does not accept the OSCAR / FLOSS project for "incubation"	This would be a minor setback in the building of an active user and developer communities and in facilitating collaboration with other related open source software development projects.	Low	• The project must keep options open to join other open source umbrella organizations such as 52North • The project must form relationships with academic institutions working in related open source initiatives

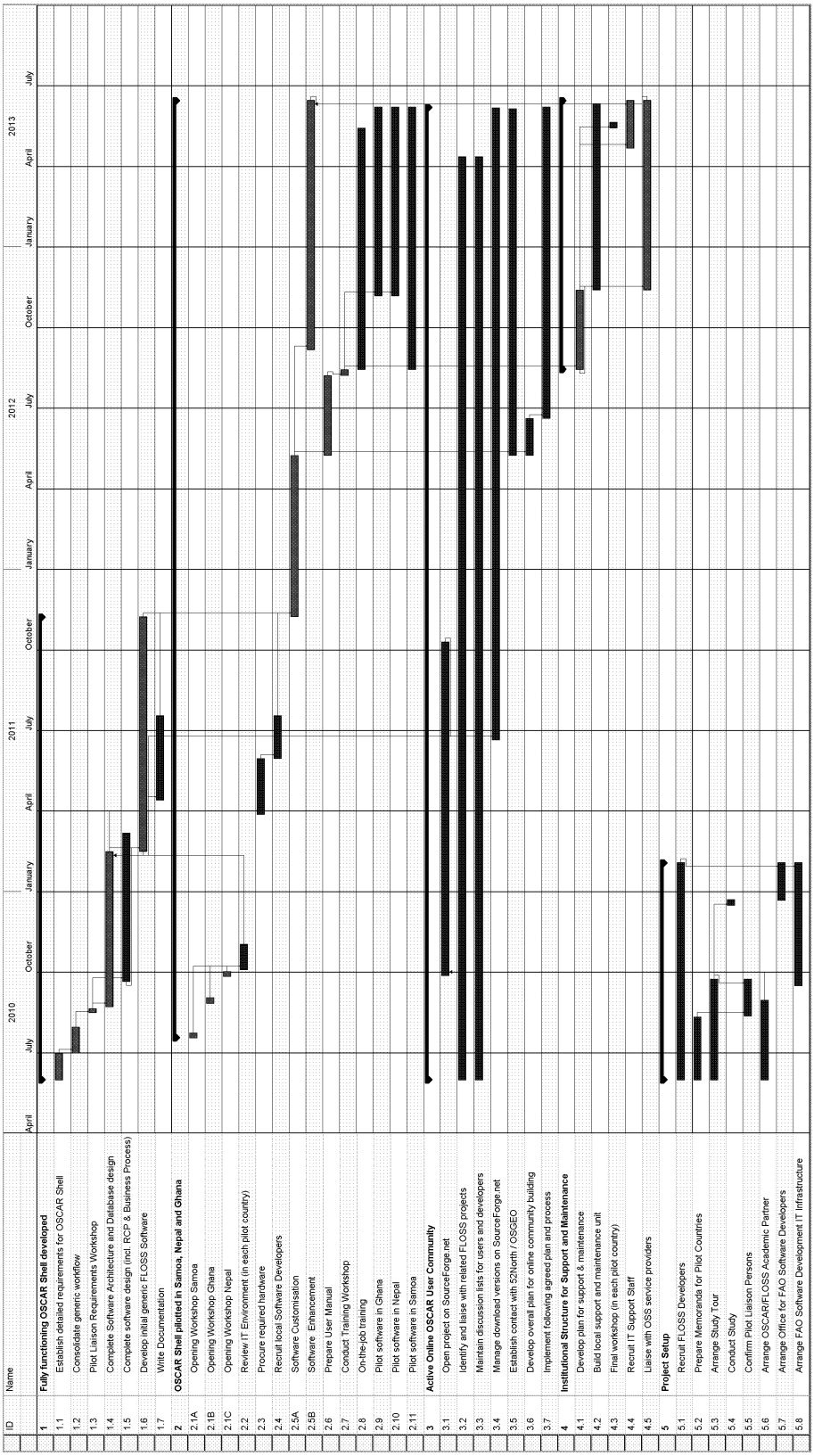
4 Roles and Responsibilities

Role	Responsibility
FAO Project Coordinator	• To update project plan and budget, monitor and report of project progress • To document the Statement of Requirements for the generic initial OSCAR/FLOSS software (including data model) • To prepare all necessary project documents including Quality Assurance and training plans • To facilitate the recruitment of other project consultants (and in particular the software developers) • To establish effective working relationships with the agencies and teams in the countries where the OSCAR/FLOSS software will be customised and piloted • To organise and manage the establishment of an online OSCAR / FLOSS user and development communities
FAO Software Developers (IT Officer (Development))	• the development, testing and documentation of software modules consistent with the approved design that supports property registration and cadastre business processes (and includes but is not be limited to spatial / map related routines to view and maintain cadastral map data, work flow definition and monitoring, automated business rules/controls for quality assurance and control purposes and data and process audit and security measures); • software support for the pilot implementation communities • training of developers responsible for the pilot implementations • support for the establishment of the pilot implementations (currently identified as Ghana, Nepal and Samoa) • support to the user and developer communities participating in the FAO Cadastre & Registration FLOSS project
Pilot Country Coordinators	• To be the main liaison person with the agency that is responsible for a pilot implementation of OSCAR/FLOSS for FAO • To assist with the definition of requirements for the initial generic OSCAR / FLOSS software • To facilitate the operation of a technical working group that will provide user and technical inputs into the design, testing and implementation of OSCAR / FLOSS within each pilot country
Pilot Country Software Developers	• The software development effort required to customise the initial generic OSCAR / FLOSS software for use in the pilot country (including the documentation, testing and user support)
Academic Partner	• Support in establishing an open source software development environment for the initial generic OSCAR / FLOSS software (including open source project registration) • Support in establishing appropriate mechanisms to encourage the

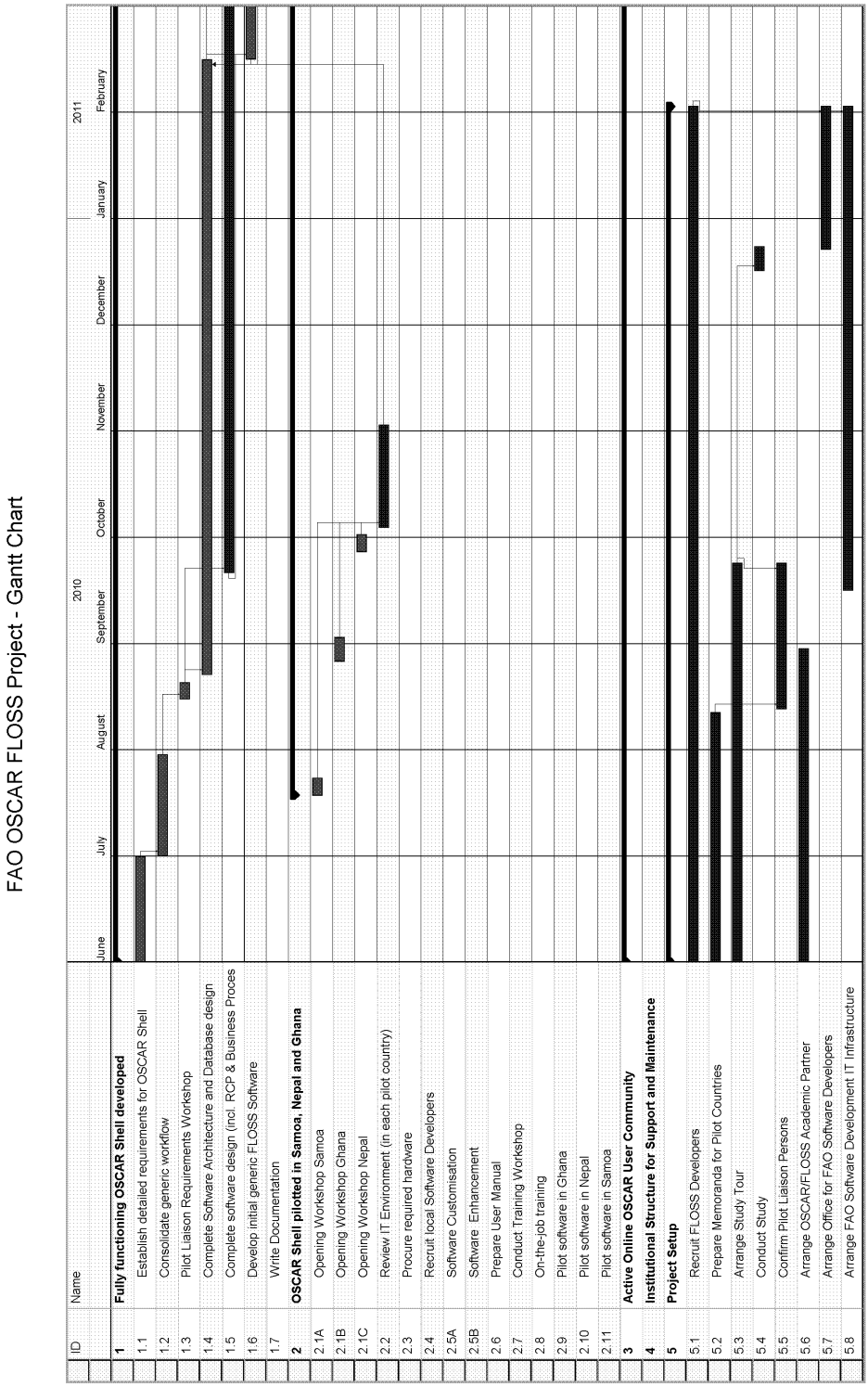
Role	Responsibility
	growth of an active user OS developers community dealing with cadastre and registration software • peer review of software code that contributes to the FAO OSCAR / FLOSS initiative • regular quality assurance review of the project (potentially, yet to be agreed to) • software development support (potentially, yet to agreed to)
Study Tour Host Organisation	• To provide the opportunity for participants of the study tour (from the implementation agencies in each of the pilot countries) to observe the operation of a modern computerized system that supports both cadastre and registration business processes • To provide the participants of the study tour with the opportunity to discuss design, development and implementation issues with staff from the host organisation that have experience in such matters
FAO (pilot) Country Offices	• To facilitate the smooth running of the FAO OSCAR / FLOSS initiative particularly in the early stages of the project
FAO Donor Coordinator	• the coordination of communications (including regular project and financial reporting) with the donor(s). At this stage the only donor for the project is the Finnish Ministry of Foreign Affairs
Donor(s)	• Government of Finland

5 2010 Work Plan

5.1 Gantt Chart of OSCAR FLOSS Project



5.2 Gantt Chart of 2010 Work Plan Activities



5.3 Activity Descriptions (2010 Workplan)

5.3.1 Output 1 Fully Functioning OSCAR Shell Developed

Activity	1.1 Establish detailed requirements for OSCAR Shell
Task Description	The feasibility studies and the updates (from activities 2.1 & 2.2) need to be examined to determine the generic requirements for all 3 pilot countries in terms of both function and non-functional requirements. These generic requirements will be assessed against other comparable documented requirements studies (Palestine, Albania, Yemen, Kosovo)
Planned Start Date:	22 June 2010
Task Duration	6 weeks
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Activity	1.2 Consolidate Generic Workflow
Task Description	The feasibility studies and the updates (from activities 2.1 & 2.2) need to be examined to determine the generic cadastre and registration workflow for all 3 pilot countries. This generic workflow will be assessed against other comparable documented work flows (Palestine, Albania, Yemen, Kosovo)
Planned Start Date:	22 June 2010
Task Duration	6 weeks
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Activity	1.3 Pilot Countries Liaison Person OSCAR Requirements Workshop
Task Description	The objective of this workshop will be to confirm what will be the requirements for the initial, generic OSCAR/FLOSS software and what additional requirements will need to be addressed as either part of the pilot country customization effort or to be documented for future extensions to the initial software offering.
Planned Start Date:	18 November 2010
Task Duration	2 days
Lead Responsibility	FAO Project Coordinator
Task Dependencies	1.1 Establish detailed requirements for OSCAR Shell
Potential Issues	No issues identified

Activity	1.4 Complete OSCAR Software Architecture & Database Design
Task Description	The main output from this activity is the Software Architecture Document (SAD) which describes the overall design and defines any standards for detailed design and development work. The SAD will also include an initial database design.
Planned Start Date:	1 September 2010
Task Duration	5 months
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

5.3.2 Output 2 OSCAR Shell piloted in Samoa, Nepal and Ghana

Activity	2.1 Opening Workshops in Pilot Countries
Task Description	The visits to each of the pilot countries is required to update and refine the results of the feasibility studies completed in August 2009. There is a need to obtain consistent details on the workflows for cadastre and registration processes and in particular those processes that are likely to be supported by the initial generic FLOSS software. The requirements for these business processes needs to be documented in a consistent fashion across all 3 pilot countries. It is also an opportunity to gather copies of any digital data that may be of use in understanding the processes and the testing of the initial generic software. These workshop represent an opportunity to test the understanding of workflow and requirements, to explain the OSCAR FLOSS project and project roles and to manage expectations, especially with respect to when pilot activities in each of these countries will start and when software will be ready for implementation.
Planned Start Date:	July 2010
Task Duration	3 months (to cover all pilot countries)
Lead Responsibility	FAO Project Coordinator
Task Dependencies	Task 2.2 (Review IT Environment in each Pilot Country) will be done in conjunction with this task
Potential Issues	No issues identified

Activity	2.2 Review IT Environment in each Pilot Country
Task Description	The review of the IT environment will include an assessment of the office conditions and condition of any existing computer equipment within the organisation, the office where the software customisation will occur, the office(s) where the software will be piloted and the remaining offices where the OSCAR software should eventually be implemented. The review will also need to include the likely calibre of the staff to be recruited for the software customisation and software support work and also the computer literacy of the likely users of the OSCAR software
Planned Start Date:	July 2010
Task Duration	3 months (to cover all pilot countries)
Lead Responsibility	FAO Project Coordinator
Task Dependencies	Task 2.1 (Opening Workshops in Pilot Countries) will be done in conjunction with this task

Potential Issues	No issues identified

5.3.3 Output 3 Active Online OSCAR User Community

Activity	3.1 Open Project on SourceForge.net
Task Description	This is an online internet registration process (www.sourceforge.net) requiring some brief documentation about the objectives of the OSCAR[1] software. It needs to be completed as early as possible so as to encourage a collaborative effort across as many groups as possible. This task should also investigate whether it is advisable to register on other open source sites such as OSGeo (www.osgeo.org) and / or 52 North (http://52north.org) keeping in mind that although OSCAR has a geospatial component, there may be some circumstances where it may be implemented as an aspatial (non geospatial) software application
Planned Start Date:	August 2010
Task Duration	1 month
Lead Responsibility	OSCAR FLOSS Academic Partner
Task Dependencies	3.2 Identify and Liaise with related FLOSS projects (to be completed in conjunction)
Potential Issues	No issues identified

Activity	3.2 Identify and Liaise with related FLOSS projects
Task Description	This task will be to identify projects, particularly development assistance land administration related projects and liaise with key individuals such as World Bank task team leaders and project implementation/coordination units to ensure they are aware of what the FAO FLOSS initiative can offer. It could also identify Open Source projects that could complement the OSCAR/FLOSS initiative but this type of cooperation is more likely to be done through SourceForge.net registration.
Planned Start Date:	July 2010
Task Duration	2 years
Lead Responsibility	FAO Project Coordinator
Task	3.1 Open Project on SourceForge.net (to be completed in conjunction)

[1] Unfortunately the acronym "OSCAR" is already used twice to describe completely different application software (Open Source Cluster Application Resources & Open Source Chemistry Analysis Routines)

Dependencies	
Potential Issues	No issues identified

Activity	3.3 Maintain discussion lists for users and developers
Task Description	This task will be to promote communication between users and developers directly associated with the OSCAR/FLOSS initiative .
Planned Start Date:	July 2010
Task Duration	2 years
Lead Responsibility	FAO Project Coordinator
Task Dependencies	3.1 Open Project on SourceForge.net (to be completed in conjunction)
Potential Issues	No issues identified

5.3.4 Project Setup

Activity	5.1 Recruit FLOSS Developers
Task Description	The FLOSS Developers together with the FLOSS Designer / Developer will produce the initial generic OSCAR FLOSS . The tasks include the preparation of TOR, obtaining the various approvals, arranging the advertisement, short-listing, interview and preparing the appointment recommendation. Following these tasks is the liaison with HR to ensure the appointment process is completed in a timely fashion.
Planned Start Date:	June 2010
Task Duration	7 months
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Activity	5.2 Prepare Memoranda of Understanding for pilot countries
Task Description	This task will formalise the participation of the pilot countries in the OSCAR/FLOSS project. Initially, the option of Memoranda of Co-operation (similar to that used between FAO and FIG) but if other ways are identified to achieve the same objective, they will be considered.
Planned Start Date:	June 2010
Task Duration	3 months
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Activity	5.3 Arrange Study Tour
Task Description	The objective of the study tour will be for representatives from each of the pilot countries to visit and observe the operation of a modern computerised system that supports registration and cadastre business processes and to discuss with those who were responsible for its development and implementation what issues were encountered and the lessons learnt from the experience. An itinerary will need to be arranged that ensures the study tour objective is met. Of particular importance will be to ensure that whatever is observed can be "translated" out of the Finnish context and into a generic context that will be understandable by the representatives from the pilot countries participating in the study tour.
Planned Start Date:	June 2010
Task Duration	3 months
Lead Responsibility	FAO Project Coordinator
Task Dependencies	5.5 Confirm Pilot Countries Liaison Persons (needs to be completed before study tour arrangements can be concluded)
Potential Issues	No issues identified

Activity	5.4 Conduct Study Tour
Task Description	The objective of the study tour will be for representatives from each of the pilot countries to visit and observe the operation of a modern computerised system that supports registration and cadastre business processes and to discuss with those who were responsible for its development and implementation what issues were encountered and the lessons learnt from the experience. The National Survey of Finland is likely to host this study tour.
Planned Start Date:	15 November 2010
Task Duration	1 week
Lead Responsibility	National Land Survey of Finland
Task Dependencies	5.3 Arrange Study Tour 5.2 Prepare Memoranda of Understanding for pilot countries
Potential Issues	No issues identified

Activity	5.5 Confirm Pilot Countries Liaison Persons
Task Description	Pilot country liaison persons need to be identified and confirmed early in the project so that the pilot countries have an active participant in the detailed planning of OSCAR/FLOSS and in particular, the definition of the requirements for OSCAR/FLOSS.
Planned Start Date:	July 2010
Task Duration	1 month
Lead Responsibility	FAO Project Coordinator
Task Dependencies	5.2 Prepare Memoranda of Understanding for pilot countries (MoU needs to be agreed in principle before liaison persons can be confirmed)
Potential Issues	No issues identified

Activity	5.6 Arrange OSCAR /FLOSS Academic Partner
Task Description	The OSCAR/FLOSS project has had a longstanding relationship with the University of Otago, New Zealand. OSCAR related software development continues at Otago and there is a need to maintain this relationship. In addition there is a need for a further academic partner to assist with the development of a user community and to provide assistance to the FAO software development team in establishing with an appropriate open source software development regime including the registration of the OSCAR as an open source project and the peer review of code produced by the FAO software development team
Planned Start Date:	August 2010
Task Duration	1 month
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Activity	5.7 Arrange Office at FAO for FLOSS Developers
Task Description	Although office space at FAO, Rome is at a premium, it is essential that office space is found for the 3 FLOSS software developers, the FAO OSCAR FLOSS Project Coordinator and any short term consultants engaged during the project. Ideally it should be one office housing all these staff.
Planned Start Date:	September 2010
Task Duration	2 months
Lead Responsibility	Principal Officer, NRC
Task Dependencies	None
Potential Issues	No issues identified

Activity	5.8 Arrange FAO Software Development IT Infrastructure
Task Description	In addition to suitable configured workstations for each of the FLOSS software developers, there is a need to establish a software development and a software testing environment on a server within the FAO Rome IT infrastructure. This will include the procurement of certain items of hardware and possibly software (although the use of open source software resources will be maximised).
Planned Start Date:	August 2010
Task Duration	3 months
Lead Responsibility	FAO Project Coordinator
Task Dependencies	None
Potential Issues	No issues identified

Appendix 1 – List of Acronyms

Term	Definition
FAO	Food and Agriculture Organization
FIG	International Federation of Surveyors
FLOSS	Free / Libre Open Source Software
GIS	Geographic Information System
ISO	International Standards Organization
IT	Information Technology
OSCAR	Open Source Cadastre and Registration
OSGEO	Open Source Geospatial Foundation
OSS	Open Source Software
uDIG	User-friendly Desktop Internet GIS
UN	United Nations